RESEARCH REPORT

Homing In

What Types of Municipalities Are Adding Residential Units, And Which Are Mounting Barriers to Housing?

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October 2022

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HOUSING CRISIS RESEARCH COLLABORATIVE

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Acknowledgments

The Housing Crisis Research Collaborative is supported by the Wells Fargo Foundation and JPMorgan Chase & Co. and managed by the Urban Institute. We are grateful to them for allowing the collaborative to advance its goals.

The views expressed are those of the author and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at urban.org/fundingprinciples.

I thank Ingrid Gould Ellen, Solomon Greene, Elizabeth Kneebone, Reed Jordan, Lydia Lo, Rolf Pendall, and Andrew Trueblood for their considerable contributions in improving this manuscript, as well as Devlan O'Connor for her detailed edits.

The Housing Crisis Research Collaborative aims to address the long-standing inequities in access to safe, stable, and affordable rental housing that have been laid bare by the COVID-19 pandemic. We provide policymakers at all levels of government with the data and analysis they need to design, implement, and evaluate more equitable and effective rental housing and community development responses to the pandemic and the ongoing rental housing affordability crisis. More information is available at https://housingcrisisresearch.org/.

Executive Summary

Housing construction in the United States has failed to match population growth over the past several decades. Growth in housing availability depends on developer interest in responding to local real-estate market demand—informed by the ability to make project financing work—but local governments also play a role in influencing housing production. Many leverage their control of land-use regulations to limit or encourage construction. In the context of fragmented local governance in metropolitan areas, is the location of additional housing supply aligned with what we might expect given interest from developers to invest in more expensive, in-demand communities? Or do certain local characteristics, which could be associated with exclusionary land-use rules, undermine the production of new housing?

To answer these questions, I develop a new analytical approach using national data on building permits and changes in housing-unit counts to estimate the degree to which growth in housing supply aligns with demand. I examine what types of cities and towns have added residential units over the past two decades and which appear to have mounted barriers to housing growth. To identify municipalities for analysis, I create new datasets of constant-geography municipalities and census tracts.

Using these data, I find that municipalities with lower home values and residents with lower incomes and less educational attainment than their respective metropolitan areas had less housing growth. These results may be expected given that developer interest in building—and their potential profit margins—may be lower therein. Municipalities with higher home values and residents with higher levels of income and educational attainment had more growth. Those with residents with moderate political ideologies feature lower housing growth than more liberal and more conservative municipalities. These results confirm an uneven distribution of housing construction within US metropolitan areas, paralleling the inequitable distribution of resources between communities, with few new units in the most impoverished locales.

Outcomes for the *most expensive* municipalities, however, vary. I show that most communities with the highest demand for development—places with residents who are more often white, have higher incomes, and are more highly educated than the average resident in their respective metropolitan areas—added significantly less than their fair share of metropolitan housing units. They are hoarding resources by blocking housing. I reaffirmed this finding through an examination of municipalities in the most expensive large US region, San Francisco. The expensive municipalities that added the least additional housing nationwide are mostly midsize suburbs in populous regions. *All* are characterized by higher levels of educational attainment than their respective metropolitan areas, few have provided for significant numbers of affordable housing units, and most are constituted largely of single-family homes.

Introduction

Housing construction in the United States has failed to match population growth. Recent research estimates a 3.8-million-unit gap in the number of homes needed to meet demand.[1] This construction deficit has reduced residential mobility (Myers, Park, and Cho 2021) and increased household cost burdens, particularly for families with low incomes who rent in large metropolitan areas (Airgood-Obrycki, Hermann, and Wedeen 2022; Joint Center for Housing Studies 2021).[2] Given this national gap in housing construction, one key question is how housing growth is distributed throughout metropolitan areas. Is the location of additional housing supply aligned with what we might expect, given interest from developers to invest in more expensive, in-demand communities? What local characteristics are associated with underproduction of housing units? And can we pinpoint specific municipalities that have produced a particularly low level of housing units?

Local governments throughout the United States play a major role in influencing housing availability, partly by leveraging the land-use regulations they control to limit or encourage construction. Such regulations often come in the form of zoning codes but can also encompass building requirements, parking minimums, impact fees, and the like. Scholars and policymakers are increasingly questioning these rules' design and implementation, suggesting that, in their current form, they too often erect barriers against the construction of new housing (Green and Ellen 2020).[3] Growing evidence suggests that overly restrictive local land-use regulations in wealthy cities may limit the construction of new housing in ways that exacerbate the housing affordability crisis, constrain economic growth, support the regressive hoarding of tax revenues and the public services they buy, and perpetuate economic inequality and racial exclusion (Chakraborty et al. 2010; Freemark, Steil, and Thelen 2020; Lens 2022; Rothwell and Massey 2009, 2010).

Some municipalities developed restrictive zoning policies partly to encourage racial and class segregation (Kahlenberg 2021). To exclude people of color and families with low incomes from certain neighborhoods, decisionmakers in some cities and towns enforced policies to limit housing construction. These policies thus perpetuated segregation and racial and economic inequalities (Greene 2019; Whittemore 2021). Fischel (2005) argues that homeowners interested in preserving their property values vote for local policymakers who minimize new construction. Others contest construction because they worry new housing may contribute to gentrification and displacement—though the preponderance of evidence shows that additional supply moderates cost increases (Been, Ellen, and O'Regan 2019; Goetz 2021). Residents who are older, male, and homeowners are more likely to participate in public meetings related to local land-use decisions and to oppose proposals for new housing construction (Einstein, Palmer, and Glick 2019).

The implication is that some residents of, and political officials in, the most in-demand municipalities—those where developers might be interested in building new housing—are mounting roadblocks to construction. In so doing, they are contributing to the national housing supply gap. In metropolitan regions such as Boston, most local jurisdictions limit residential development to fewer than eight units per acre, essentially banning more affordable apartment construction (Pendall, Puentes, and Martin 2006).

Altering land-use regulations may allow or encourage more housing development. Many municipalities have reformed their zoning rules to accomplish this aim (Pendall, Lo, and Wegmann 2022; Wegmann 2020).[4] States, however, can also play an important role, particularly with regard to municipalities that are not providing their fair share of new housing in regions with high or growing demand.[5] States determine which local governments have the authority to zone, the extent of that authority, and the necessary preconditions to zoning authority (such as comprehensive planning).[6]

Although most states have deferred to municipalities on land-use policy, some have more actively reigned in exclusionary practices. State legislatures, for example, can preempt or override local zoning rules that they deem overly restrictive or burdensome, grant developers rights to appeal local zoning decisions, and require localities to report on how their zoning and land-use regulations allow sufficient housing to meet growing demand (Fisher and Marantz 2015; Greene and Shroyer 2020; Infranca 2019; Kazis 2020; Pendall 2008). (States can also limit local housing policy in other ways, such as by preventing the implementation of inclusionary zoning policies.) If they desired, both state and federal governments could condition their grant distribution to local governments on reforms that lift regulatory barriers to housing supply (Greene and Ellen 2020).[7] Other countries, such as France, have implemented stronger measures, including requirements that all municipalities achieve a 25 percent social housing share by 2025 or face large fines from the national government (Freemark 2021).

To develop such policies effectively, state and federal policymakers need to identify which local governments are overly limiting housing construction in the face of development demand, whether through their use of local zoning laws, other land-use regulations, or choices related to local tax policy, environmental rules, and more. Researchers have for decades sought to identify the extent to which land-use regulations impede housing construction in the United States, but their efforts have been complicated because no standardized datasets compare land-use rules across localities.[8] Previous work, such as the Urban Institute's National Longitudinal Land Use Survey and the Wharton Residential

Land Use Regulatory Index, use survey data to catalogue differences (Gyourko, Saiz, and Summers 2008; Pendall 2020; Pendall, Lo, and Wegmann 2022). But surveys rely on responses from local staff that can be inaccurate, whether because of incorrect answers, or, in the case of the Wharton Index, questions that rely on potentially unreliable professional judgement. Moreover, the metrics surveys produce (such as how long it takes to advance a new housing project) are not directly tied to outcomes, such as the amount of housing built (Lewis and Marantz 2019).

Other researchers have developed methods for understanding local land-use regulations without relying on surveys, but rather on the gap between marginal and average land prices (Glaeser and Gyourko 2002) or state court records related to land use (Ganong and Shoag 2017) as proxies for the restrictiveness of local laws. More recently, efforts to develop detailed zoning atlases have compared specific zoning features across municipalities within a state or region (Bronin 2021). These approaches, however, rely on costly and time-consuming manual coding of local regulations, and their coverage is incomplete. Additional analysis is needed to understand the relationships between local characteristics and housing stock growth—and to identify the jurisdictions doing the least to add space for residents.

Using a new approach that leverages national data on housing availability and permitting, I seek to answer two related questions. First, to what degree are demographic, economic, and political characteristics at the municipal level associated with residential building permits and changes in housing availability over the past two decades? Previous research suggests two possible hypotheses. On the one hand, we might expect that the whitest and wealthiest jurisdictions have added less housing than their respective metropolitan areas—despite local real-estate demand—because of a local desire to maintain exclusivity. On the other hand, we might expect that the more diverse and lower-income jurisdictions would *also* have added less housing, owing to a lack of local real-estate demand in the context of uneven metropolitan development (Smith 2010). Second, can we identify a cohort of municipalities nationwide that has added significantly less housing than we might expect, given local and regional market demand? These municipalities may have used restrictive local land-use regulations, or other tools within their control, to constrain residential supply and perpetuate inadequate access to housing.

I find that, nationally, municipalities with higher home values, higher median household incomes, and residents with more years of educational attainment than their respective metropolitan areas feature more housing-unit growth and permit more new housing units than less expensive communities with residents who have lower levels of educational attainment and income. That finding likely reflects variation in real-estate demand that encourages a disproportionate share of new development in the "favored" portions of metropolitan areas. The lowest-value municipalities attract very little construction, paralleling the uneven distribution of resources that characterizes US metropolitan areas. This is not to say that more expensive municipalities have accommodated *enough* housing to meet regional demand, just that they have accommodated *more* than nearby municipalities. I also demonstrate that the jurisdictions with residents holding moderate ideologies have added less housing on average than more liberal municipalities, and significantly less than more conservative municipalities. Finally, I find considerable variation in housing-unit growth and permitting in the most expensive municipalities; despite their local real-estate markets, some jurisdictions have developer interest but little—if any—housing growth. I confirm the robustness of these findings by using two distinct methods and both housing-unit growth and housing permitting data.

Building on the previous finding, I document a cohort of municipalities in US metropolitan areas that have added little housing in recent decades, despite local and regional real-estate demand. Although there is no perfect measure of demand for housing development, I assume that municipalities are in high demand when located in metropolitan areas that saw overall housing-unit growth between 2000 and 2020, and that have housing values at least 30 percent higher than the metropolitan average. These municipalities may be pursuing local land-use policies that prevent new housing construction, though I do not test that issue directly. I find that most of these high-demand municipalities have increased their housing stock by dramatically less than their respective metropolitan areas. These municipalities also host few, if any, federally subsidized affordable housing units, and have residents who are more often white, have higher incomes, and have more years of education compared with their respective metropolitan areas.

Jurisdictions with low housing production but high levels of demand could welcome new development but may be using exclusionary measures such as large-lot, single-family zoning to avoid it. State and federal incentives or mandates to encourage a more inclusive approach to land-use regulations could also target these municipalities. Additional research is necessary to identify the degree to which such changes would significantly increase housing availability.

Data and Methods: Measuring Local Housing Growth and Exclusion

I develop a new approach to measure exclusion and identify exclusionary municipalities. By exclusion, I refer broadly to restricted housing growth in the context of demand for housing development. By exclusionary municipalities, I refer to those local jurisdictions with land-use authority that provide few opportunities for new housing despite likely interest from developers and would-be residents.[9] These definitions are based on outcomes, not directly on land-use restrictions. This definition of exclusionary municipalities assumes a strong real-estate market at both local and regional scales. By strong local market, I mean relatively higher housing values, indicating the possibility for financial return to developers investing therein. Higher housing values indicate a willingness of more people to live in specific housing markets and thus more interest from developers to build therein—if allowed to do so (Gyourko 2009; Nathanson and Zwick 2018). By strong regional market, I mean metropolitan areas where the number of households is increasing, indicating a metropolitan economy generating the conditions for new housing.[10]

As the outcomes of interest, I focus first on growth in housing units by municipality between 2000 and 2015–19 or 2020 (depending on the method used, as described in the following sections), controlling for metropolitan trends. Second, I examine total housing permits issued by municipality between 2000 and 2020 as a proportion of housing units in 2000, again controlling for metropolitan trends. As a robustness test, I also consider subsets of this time period, from 2000 to 2010 and from 2010 to 2020. I work at the municipal level, as nationwide data are available and municipalities are often primary decisionmakers in land-use policy. Municipalities also allow me to compare local characteristics, including housing values, median incomes, racial demographics, and educational attainment, with outcomes related to housing growth.

To establish my analysis geographies, I begin by creating a database of US census data at the tract, place, and core-based statistical area (CBSA) scales for the nation. I combine these with data from the Census Building Permits Survey, which provides information about housing permits recorded within CBSA and permit-issuing jurisdictions, many of which are municipalities; some others are townships and counties.[11] Places are the census–defined entities that often equate to municipal governments, such as cities, towns, and villages, in most parts of the country. Some places are municipalities coterminous with counties, such as Denver, Philadelphia, and San Francisco. Others are census-designated places (CDPs), population clusters in unincorporated areas that the census defines for statistical purposes but that have no governance function. Hereafter, I refer to "places" using the shorthand "municipalities" to minimize confusion.

Many types of local jurisdictions regulate land uses, but municipalities are the most common level of government to perform that role within metropolitan areas, so I focus on them here. The majority of municipalities in my samples are also classified by the US Census as permit-issuing jurisdictions. Through decisions at city council, on planning commissions, and in other local administrative bodies, municipal leadership chooses what sorts of housing densities they allow within their borders.

In most states, counties or townships determine zoning in the unincorporated areas outside municipalities. In some states, counties and townships play a larger role in zoning, even in highly urbanized zones. Townships often tightly restrict housing construction (Marantz and Lewis 2022).[12] Even so, I limit the local-government analysis in this research to the place scale, given data availability.

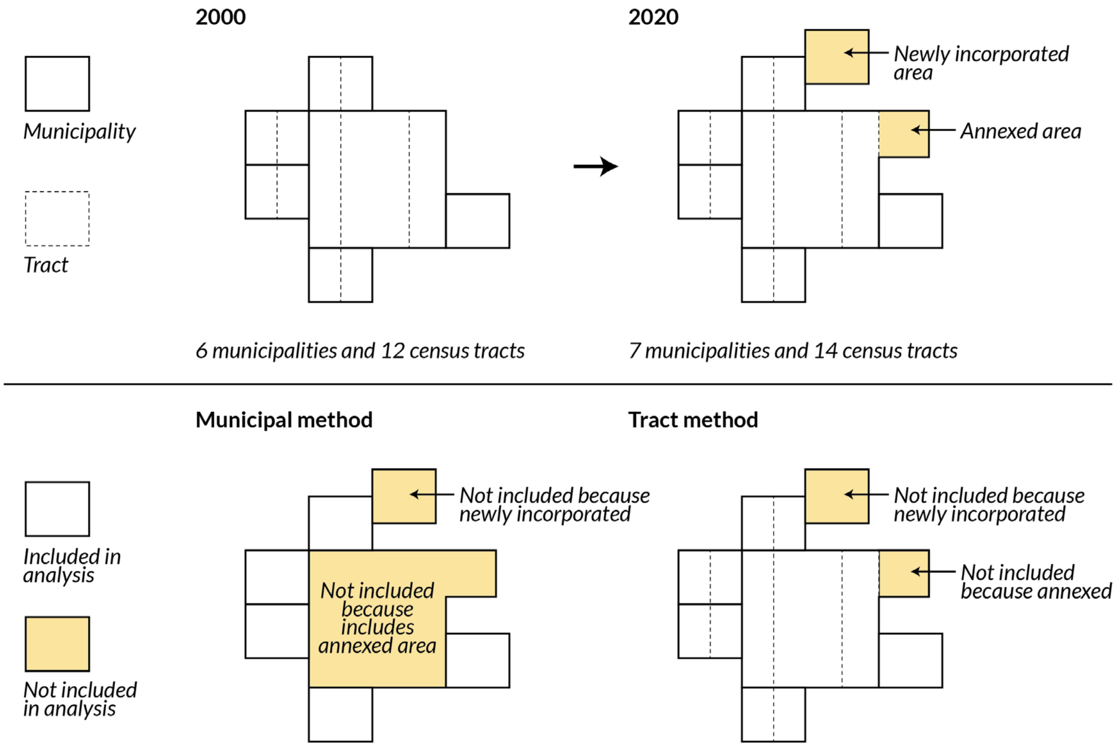
I also evaluate metropolitan-area conditions to ensure appropriate comparisons and to account for demand. If a municipality is producing more new housing than the national average but less than its neighbors within the same metropolitan area, it may not be accommodating its fair share of regional growth and may be using land-use regulations to prevent construction. On the other hand, if a municipality is adding less housing than the national average—but more than its neighbors—it may be located in a region with less demand for housing (or inadequate metropolitan housing construction in general). Metropolitan conditions also allow me to account for other differences between municipalities within a region. For example, municipalities with higher home values are more likely to attract interest from developers because of the demand to invest therein.

I use two methods to account for changing jurisdictional boundaries and to increase the robustness of findings. I refer to these as the "municipal method" and the "tract method." The municipal method examines housing outputs in constant-geography municipalities for which boundaries did not substantially change between 2000 and 2020. It has the benefit of portraying municipalities in their entirety and it allows me to examine building permits available at the municipal level. But in so doing, I am unable to consider municipalities that changed their boundaries, for example, though annexation. The tract method, on the other hand, examines housing-unit changes in constant-geography census tracts located within municipalities. This allows me to broaden my sample to include municipalities whose boundaries changed over time to capture changes in regions where annexation is common, such as in the South. The key benefit of the tract method is that it allows me to examine changes in housing availability in the collection of neighborhoods that remained within a municipality's boundaries from 2000 to 2020, even in municipalities with changing geographies.

In figure 1, I illustrate a simplified, hypothetical metropolitan area that had six municipalities divided into 12 census tracts in 2000. By 2020, another municipality was incorporated, and one municipality annexed an adjacent, previously unincorporated area. In the municipal method, I do not analyze municipalities that either changed size or did not exist in 2000. In the tract method, I only analyze tracts present *in the same municipality* in both 2000 and 2020. I detail these methods in the following sections.

FIGURE 1

Analysis of Hypothetical Metropolitan Area Using Municipal and Tract Methods



Municipal method

Geographies studied
- Municipalities with constant geographies from 2000 to 2020 and located within metropolitan areas.

Data examined
- Change in housing units from 2000 to 2020 in each municipality.
- Housing permits from 2000 to 2020 as a share of 2000 housing units in each municipality.

Tract method

Geographies studied
- Census tracts located within the same municipality from 2000 to 2020 and located within metropolitan areas.

Data examined
- Change in housing units from 2000 to 2015–19, summed for all applicable tracts in each municipality.

Source: Author's analysis.

The Municipal Method

In the municipal method, for each municipality and metropolitan area I collect US census decennial data on municipal-level population, housing units, and geographies in 2000, 2010, and 2020. These decennial housing-unit data are full count, meaning they include all units, not just new ones. Full-count data also account for increases caused by units being split, as well as declines caused by replacement of multifamily buildings with single-family homes, demolition, conversion to other uses, and natural disasters.

I collect 2000 Census data and 2015–19 five-year American Community Survey data on municipal demographic features, including population density, median housing values, rent levels, median household incomes, share of residents below the federal poverty level, household tenure, share of adults by educational level, and race and ethnicity (2020 demographic data may be less reliable because of the COVID-19 pandemic[13]). I collect data on the municipal-level political ideologies of residents from a dataset prepared by Tausanovitch and Warshaw (2013). Finally, I assemble information from the National Housing Preservation Database on the number of affordable housing units in each municipality funded partly or fully through project-based subsidies from the federal government.[14]

Data are available for 29,573 municipalities nationwide, housing about 244 million inhabitants in 2015–19, or 75 percent of the population. I cannot, however, compare time-variant outcomes in this full population of municipalities for two reasons. First, many municipalities changed their geographies between 2000 and 2020. This could raise concerns about the relationship between local land-use policy and housing production. Annexation could cause an "increase" in local housing-unit availability simply by absorbing surrounding existing units, many developed under the land-use policies of a different jurisdiction (e.g., a county regulating land use in unincorporated areas). Housing-unit changes in that area do not represent municipal policy. As such, in the municipal method, I exclude municipalities whose land area changed by more than 5 percent.[15] Second, about 17 percent of municipalities have no data available in Census 2000, 2020, or the 2015–19 American Community Survey.[16] I eliminate from consideration municipalities with inadequate data availability.

I then narrow the dataset to municipalities in census-defined metropolitan or micropolitan areas, collectively referred to by the US Census Bureau as CBSAs. These regions consist of counties containing cities and suburban communities linked by social and economic factors. CBSAs are frequently used to measure housing demand. I refer to them hereafter as "metropolitan areas." Finally, I select only municipalities with at least 10,000 residents in 2000. This cutoff is arbitrary but based on the assumption that smaller jurisdictions are less likely to have staff developing land-use policy; previous scholarship identifies a relationship between local population size and planning capacity (Freemark, Hudson, and Zhao 2019; Shi, Chu, and Debats 2015).

I then add building permit data for each municipality. I use these data to identify how many housing units each municipality permitted from 2000 to 2020. The permit data also allow me to classify municipalities by whether they issue permits, according to the US census. Permit issuance approximates whether each municipality has control over land-use regulations.[17]

Leveraging the municipal method, first, I assess the change in a municipality's housing units from 2000 to 2020, divided by the change in its metropolitan area's housing units from 2000 to 2020, to create a ratio of housing-unit growth (ratio 1). A municipality with a ratio below 1 has taken on less than its proportional share of new units (from the 2000 baseline), whereas one with a ratio above 1 has taken on more than its regional share. Second, I assess (a) the number of units permitted per municipality, divided by its total housing units in 2000, and (b) the number of units permitted in each metropolitan area, divided by its total housing units in 2000. I divide (a) by (b) to create a permits ratio (ratio 2). Each is a "fair share" ratio; both assess whether a municipality is absorbing its relative share of regional housing demand. These ratios are premised on the assumption that a municipality should grow proportionally to its baseline conditions (this assumption may be contested; perhaps some municipalities should absorb more or less of their baseline, based on factors like access to employment or transit, but I do not evaluate those alternatives). As a robustness test, I also consider changes from 2000 to 2010 and from 2010 to 2020.

The municipal method has several limitations. First, because I constrain my analysis to municipalities, I do not address counties and townships, each frequently tasked with developing land-use regulations. Second, data at the municipal scale are averaged across the entire jurisdiction; as such, they do not account for intramunicipal variation, such as between neighborhoods with considerable housing construction and others with housing-unit loss. Third, because I select municipalities that retained similar land area over the study period, the sample size is limited and disproportionally excludes municipalities in the South and West (I describe the missing municipalities in the section below comparing the municipal and tract methods). Using the municipal method, I cannot examine changes in cities such as Charlotte or Houston, which added land during the study period. As such, this analytical approach may fail to identify some of the most exclusive communities.

The use of building permit data alone could also be problematic. These data do not necessarily reflect actual housing construction, considering that a permitted unit is not necessarily completed one. Further, I do not assess permitting in the many municipalities that changed geographies. But in combination with housing unit data, the permit information serves as a useful robustness test to verify findings.

The Tract Method

The tract method builds on the municipal method. I begin by leveraging already-collected data for census places and metropolitan areas. I identify all places located within metropolitan areas, then intersect the 2000 and 2020 places to identify geographies that remained within the same municipality's boundaries in both years. This step eliminates from analysis land annexed or devolved from municipalities. Once this intersection is complete, I select only areas that had the same place name (or census identification code) in 2000 and 2020.[18] This ensures that I exclude land that transferred jurisdiction from one municipality to another.[19] Then I eliminate any CDPs. Each step allows me to focus on municipalities most likely to have maintained land-use control over a particular land area over the study period. I further verify this control by identifying which sample municipalities are also present in the building permits database.

Next, I intersect municipalities with data from the Historical Housing Unit and Urbanization Database 2010 (Markley et al. 2022).[20] This database provides constant-geography census tract estimates of unit counts for every decade since the 1940s, using 2010 tract boundaries. As of this writing, these data do not include the 2020 Census, but American Community Survey data for 2015–19 are available. For each tract, I calculate the percentage of its original land area located within geographies intersected with municipalities. I count all tracts with areas at least 50 percent preserved within this intersected area.[21] I then sum all housing-unit data for each municipality.

The end products of the tract method are two figures: The number of units in tracts within each municipality in 2000 and in 2015–19. Though these figures often do not account for entire municipalities, they represent time-invariant geographies. As such, I can calculate the change in units for tracts in each municipality as a measure of acceptance of new housing, generally in already-developed neighborhoods. I divide this change by the percentage change in metropolitan housing units, creating a third "fair share" ratio (ratio 3). As with the municipal method, I select only municipalities with at least 10,000 residents in 2000; I add a criterion of a minimum of 100 units per tract in 2000 to avoid outlier land. As a robustness test, I also consider trends at the tract level from 2000 to 2010 (but not from the short 2010 to 2015–19 period).

I do not use permit data with the tract method. National permit information is not disaggregated within municipalities; I cannot be sure whether permits were delivered to projects within the tract method's sample tracts or to areas of municipalities outside those tracts. That said, in several of the following tables I provide information about permits within municipalities the tract method covers, to document the method's comprehensiveness.

Like the municipal method, the tract method suffers from limitations. First, it relies on unit data available only for 2015–19; the data are not as up to date or as accurate as the 2020 decennial data in the municipal method. Second, this approach, by relying on tract-level data, excludes tracts with only a minority of their area within a single municipality—while potentially including units from land outside municipalities. Third, because unit growth is uneven, it is possible that a municipality, for example, had generally pro-housing production policies, but that those policies largely applied to areas outside the constant-geography tracts I study (or the inverse). Finally, I compare data from the tract method to full municipal-level demographic data in several findings; these demographics may represent neighborhoods not included in the analysis.[22] Even so, by comparing data from the two methods, my confidence about results improves.

Comparing and Contextualizing the Municipal and Tract Methods

The municipal and tract methods allow us to tell somewhat different stories. The municipal method highlights trends across entire municipalities, outputting information about changes in unit counts in every part of a jurisdiction, densely built or not. For many municipalities, the tract method provides information about a subset of neighborhoods. As such, it is more likely to provide information about changes in units in already-developed areas.

In table 1, I show how I identify analysis samples through the criteria described for the municipal and tract methods. The municipal method produces a sample of 1,830 municipalities, collectively housing roughly 106 million inhabitants in 2015–19, or one-third of the nation's residents. The tract method sample is larger, encompassing parts of 2,584 municipalities housing 166 million inhabitants—though many of those inhabitants live outside the tract method's sample. A map of the municipalities included in each method is featured in Appendix A, with indicative municipalities labeled.

TABLE 1

Sampling of Municipalities to Compare Housing Growth over Time, by Method

	Municipal Method Sample		Tract Method Sample	
	n	Population (2015–19)	*n*	Full municipal population (2015–19)
Full population of municipalities in dataset	**29,573**	**244,451,098**	**29,573**	**244,451,098**
1a. Municipalities with land area that did not change by more than 5% between 2000 and 2020	13,417	127,333,078	NA	NA
1b. Municipalities with constant-geography tracts in their jurisdiction in both 2000 and 2015–19	NA	NA	4,379	177,851,130
2. Municipalities with data available in 2000, 2015–19, and 2020	24,405	232,118,410	4,367	177,485,494
3. Municipalities with populations of at least 10,000 in 2000	3,368	185,889,836	2,587	166,088,348
4. Municipalities with constant-geography tracts, each with at least 100 housing units	NA	NA	4,369	177,765,486
5. Municipalities within census-defined metropolitan or micropolitan areas in 2020	21,672	235,708,934	4,379	177,851,130
Sample of municipalities meeting criteria 1–5, as applicable	**1,830**	**106,223,505**	**2,584**	**166,037,305**

Source: Author's calculations based on US Census 2000 and 2020 and American Community Survey 2015–19.
Note: NA = not applicable.

Beyond the development of the two samples, I create a constant-geography dataset of US metropolitan areas (metropolitan areas *also* change geographies over time). I identify counties defined by the census as within a metropolitan area in 2020, then associate that area with the same counties in 2000. Without such standardization, metropolitan changes in units could reflect geography as much as housing availability. I can standardize these metropolitan geographies because they are not political entities with control over land-use regulations, unlike most municipalities.

Compared with the full population of municipalities, the tract method sample is more inclusive than the municipal method sample (table 2). The tract method incorporates municipalities in a far larger share of the nation's metropolitan areas (731, versus 369, of 938), including almost all with at least 100,000 housing units in 2020. The municipal method does include municipalities in 25 of the 26 metropolitan areas with at least 1,000,000 housing units in 2020; the Charlotte-Concord-Gastonia, NC-SC, metro area is excluded, as it had no constant-geography municipalities with at least 10,000 residents in 2000.

The municipalities in the tract method sample are almost all also in the permit database. The municipal method features more municipalities without permit information. In addition, the tract method accounts for a higher share of the total units within municipalities, incorporating 58 percent of the countrywide total, versus 43 percent. These comparisons indicate that the tract method may produce results that are more representative of the nation.

TABLE 2
Municipalities and Metropolitan Areas in Sample, by Method

	Full population of municipalities	Municipal method sample	Tract method sample
Total metropolitan areas	**939**	**369**	**731**
Micropolitan areas	546	145	359
Metropolitan areas	392	224	372
Metropolitan areas with at least 100,000 housing units in 2020	205	146	201
Municipalities	29,573	1,830	2,584
Municipalities with building permit data	NA	78%	98%
Housing units	104,872,154	45,141,168	61,261,700

Source: Author's calculations based on US Census 2020 and Building Permits Survey.
Notes: The number of housing units in the sample is from 2020 for the full population of municipalities and the municipal method, and from 2015–19 for the tract method, just including units located within sample tracts (i.e., not necessarily for full municipalities). NA = not applicable.

Table 3 summarizes key characteristics of municipalities in the dataset. Municipalities in both the municipal method and the tract method samples have populations that are less white, have somewhat higher incomes, and have more years of education than the populations of metropolitan areas overall—though their variation therein is larger. The average sample municipality increased its unit count by 13.2 percent between 2000 and 2020 according to the municipal method and by 13.9 percent between 2000 and 2015–19 according to the tract method; these figures were lower than those of the average metropolitan area (I find similar trends for the 2000 to 2010 and 2010 to 2020 periods, though for the latter the sample municipalities increased their unit counts slightly faster than their respective metropolitan areas).[23] Between 2000 and 2015–19, the average municipality in the municipal method sample increased its population by 7.8 percent; the average tract method municipality by 19 percent. The average municipality in the municipal method sample issued 3,771 housing permits from 2000 to 2020, with slightly more than half of those in the 2000 to 2010 period.

TABLE 3

Characteristics of Municipalities and Metropolitan Areas in Sample, by Method

	Municipal Method Sample			Tract Method Sample			All US metro. munis. with ≥10,000 residents in 2000
	Muni.	Metro. areas	Ratio, avg. muni./ metro. area	Muni.	Metro. areas	Ratio, avg. muni./ metro. area	
Municipalities	**1,830**	**369**		**2,584**	**731**		**3,366**
Housing units	**24,667 (105,532)**	**282,675 (677,878)**	**0.071 (0.141)**	**23,708 (91,195)**	**172,749 (497,636)**	**0.094 (0.143)**	**23,465 (83,801)**
Mean change in housing units, 2000–19/20 (%)	+13.2 (23.7)	+14.8 (16.1)	0.810 (4.868)	+13.9 (31.3)	+16.6 (17.2)	0.368 (13.79)	+25.0 (45.7) ***
Mean change in housing units, 2000–10 (%)	+7.9 (14.6)	+10.6 (9.9)	0.644 (2.703)	+10.4 (25.9)	+11.5 (10.1)	0.663 (7.51)	+15.2 (29.2) ***
Mean change in housing units, 2010–19/20 (%)	+4.4 (7.8)	+3.4 (6.2)	0.912 (4.032)	+2.7 (6.3)	+4.2 (7.3)	−0.036 (23.64)	+7.5 (18.6) ***
Housing permits, 2000–20	3,771 (16,655)	93,271 (169,822)	0.038 (0.101)	5,169 (16,145)	68,006 (137,991)	0.076 (0.154)	4,906 (15,680)[a] **
Housing permits, 2000–10	2,016 (8,379)	54,593 (96,057)	0.037 (0.101)	2,914 (8,445)	39,761 (78,096)	0.075 (0.155)	2,766 (8,187)[a] ***
Housing permits, 2011–20	1,755 (8,527)	38,679 (76,464)	0.039 (0.104)	2,255 (8,029)	28,245 (61,946)	0.078 (0.158)	2,140 (7,808)
Housing permits, 2000–20, as share of 2000 housing units	0.146 (0.215)	0.148 (0.093)	NA	0.380 (0.961)	0.269 (0.177)	NA	0.258 (0.374) ***
Median household income, 2015–19	$72,776 ($33,340)	$56,361 ($13,137)	1.050 (0.391)	$65,584 ($29,443)	$54,103 ($11,056)	1.007 (0.345)	$68,500 ($31,030) ***
Non-Hispanic white population, 2015–19 (%)	59.3 (26.1)	71.2 (19.0)	1.010 (0.451)	61.1 (24.4)	72.4 (19.4)	1.000 (0.387)	60.3 (25.2)
Adults 25+ with a bachelor's degree, 2015–19 (%)	34.7 (17.8)	26.1 (9.0)	1.016 (0.450)	32.4 (16.5)	24.8 (8.7)	1.025 (0.413)	32.7 (16.9)[a] ***
Housing value, 2015–19	$319,237 ($280,343)	$187,405 ($121,035)	1.024 (0.519)	$269,319 ($247,662)	$168,446 ($92,769)	1.012 (0.458)	$280,074

Source: Author's calculations based on US Census 2000, 2010, and 2020; American Community Survey 2015–19, and Building Permits Survey.

Notes: Standard deviations are noted in parentheses. Housing-unit data are for 2020 for municipal method and 2015–19 for tract method; change in housing-unit data are 2000–2020 for municipal method and 2000 through 2015–19 for tract method. Permit data in tract method sample include all permits throughout sample municipalities; some permits are outside tracts otherwise analyzed. Ratios compare each municipality to its respective metropolitan area. Rightmost column shows p-values resulting from *t*-tests of means comparing municipalities in sample versus larger group of US municipalities with at least 10,000 residents in 2000 and in metropolitan areas. NA = not applicable.

[a] Statistically significant difference in result from *t*-test is valid only for municipal method.

*** $p < 0.01$.

Table 3 also compares the sample municipalities with their *respective* metropolitan areas. I use such comparisons throughout the paper to identify divergence between a municipality and its neighbors (measuring spatial allometry).[24] The average sample municipality has between 7 and 9 percent of its metropolitan area's housing units, depending on the method. Municipalities in both samples average similar household incomes, share of population that is white, share of adults with bachelor's degrees, and housing values to their respective metropolitan areas.

The sample municipalities averaged less housing expansion than their respective metropolitan areas in the 2000–10, 2000–19/20, and 2010–19/20 periods. The tract method shows lower housing production in sample municipalities than in metropolitan areas; this likely occurred for two reasons. First, the tract method relies on data from 2015–19, not 2020. Second, it excludes tracts that are mostly outside a municipality; these are more likely to be at the outskirts of jurisdictions and thus potentially more available for greenfield development.

Another key explanation for the difference in housing expansion is documented in the rightmost column of table 3, which shows data for *all* municipalities with at least 10,000 inhabitants in metropolitan areas and the results of *t*-tests of means comparing all municipalities with those in both samples. This comparison shows that municipalities *not* examined had residents with lower median household incomes than those in the municipal method and a much higher change in units between 2000 and 2020 for both methods, on average.

Appendix B details the share of housing units and permits by metropolitan area included in the samples in the 50 largest metropolitan areas. The average such metropolitan area had 32 percent of its units included in the municipal method sample and 47 percent included in the tract method sample. Levels vary widely. Southern and Western regions where annexation is common—metropolitan areas such as Houston, Charlotte, and San Antonio—had 10 percent or fewer of their housing units in the municipal method sample but a much higher share covered by the tract method. Other regions, such as New York, Los Angeles, and Minneapolis, had more than 70 percent of their housing units covered in both methods' samples.[25] These differences reflect regional variation in legal allowances for changes in jurisdictional geographies over time.

Appendix C is a density plot of changes in housing units, plus the number of permits delivered as a share of units in 2000, by sample municipality. By 2020, 55 percent of municipalities gained or lost up to 10 percent of units since 2000 (meaning their unit count remained roughly steady); 43 percent gained more than 10 percent and 2 percent lost more than 10 percent.

In the next section, I report the results of analyses comparing local characteristics with data on changes in housing availability. Because these analyses examine housing-unit and permit outcomes rather than land-use codes, results do not reflect regulations directly. Housing stock growth (or decline) is driven by factors other than land-use regulations, such as inadequate demand (caused by population loss, economic decline, lack of access to jobs, or other factors) or supply constraints (such as lack of developable land, lack of infrastructure, and high labor and materials costs). That said, I attempt to account for demand-side dynamics by comparing changes in units within municipalities, and number of permits delivered, with broader metropolitan areas, and by making assumptions about housing demand based on housing values.

Findings: Associations between Housing-Stock Growth and Local Demographics

In this section, I compare housing growth with a host of local demographic, economic, and political characteristics. To examine associations between demographics and housing outcomes, I begin by testing linear correlations between local characteristics (in 2000 and 2015–19) and changes in housing availability from 2000 to 2020 using the municipal method). I test correlations directly and after controlling for metropolitan housing growth. The latter comparison contextualizes municipal data within the regional context. In table 4, I find no correlation in either year, and using either direct or metropolitan-controlled data, exceeding +/−0.21; these data have limited linear explanatory value in themselves. There are no direct associations between the local characteristics I study and changes in housing-unit availability.

TABLE 4

Correlations between Municipal Housing-Unit Growth from 2000–20 and Local Characteristics

	Correlation with Municipal Housing-Unit Growth, 2000–20		Correlation with Municipal Housing-Unit Growth Relative to Metropolitan Housing-Unit Growth, 2000–20	
	2000	**2015–19**	**2000**	**2015–19**
Population density	−0.154	−0.073	−0.036	−0.023
Housing value	0.023	0.039	−0.010	−0.008
Rent	0.127	0.143	−0.003	−0.005
Median household income	0.166	0.156	0.004	0.001
Share of population below federal poverty level	−0.161	−0.200	0.033	0.033
Share of households renting	−0.155	−0.114	−0.016	−0.010
Share of adults 25+ with a bachelor's degree	0.122	0.155	0.016	0.023
Share of population non-Hispanic white	0.042	0.009	−0.000	0.007
Share of population non-Hispanic Black	−0.123	−0.119	0.005	−0.002
Share of population Hispanic	0.056	0.068	−0.005	−0.011
Change in housing value, 2000 to 2015–2019	0.195		−0.001	

Source: Author's calculations based on US Census 2000, US Census 2020, and American Community Survey 2015–19.
Notes: n = 1,830. Municipal method sample used.

There are several potential explanations for this lack of correlations. One is that there are no relationships. Another is that, while local characteristics influence unit growth, they do so at the neighborhood scale, not the municipal scale. An alternative is that these characteristics work in concert to produce outcomes; for example, wealthier cities could add fewer housing units relative to their respective metropolitan areas, but only when their residents have high educational attainment.

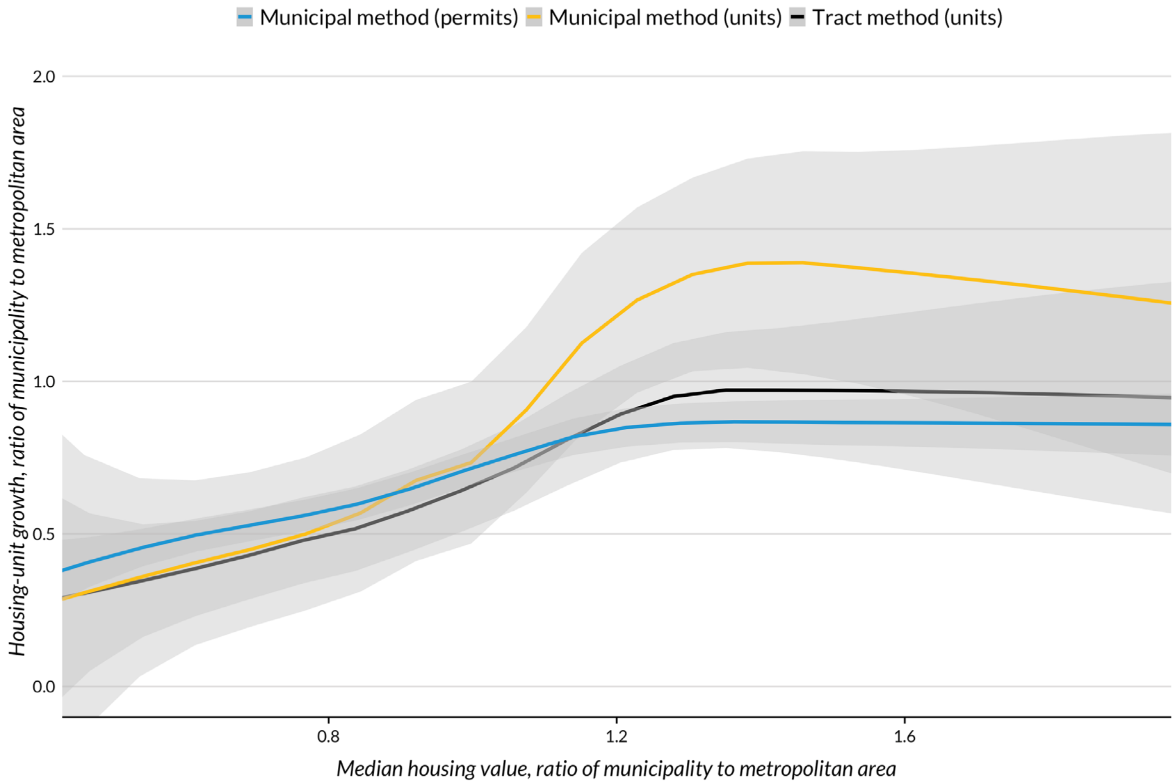
To further explore these associations, in figure 2 I graph relationships between housing values and housing-unit growth in sample municipalities over the past two decades, using both methods and both housing unit and permit data. Such figures can help identify nonlinear associations. To account for metropolitan-area characteristics, I use the ratio of each municipality's characteristics to its respective metropolitan area's characteristics, for both independent and dependent variables. This allows me to control for interregional variation across the nation.

Consider the relationship between a municipality's housing values and unit growth. For housing values, a ratio above 1 means a municipality has more expensive housing on average than its metropolitan area; a ratio below 1 means its housing is less expensive. I compare these data with measures of housing availability: (a) the ratio of housing-unit growth within a city and within its metropolitan area (ratios 1 and 3) and (b) the ratio of building permits per unit in each municipality and its metropolitan area (ratio 2). A municipality with a ratio above 1 is increasing its housing stock or approving permits proportionately more than its metropolitan area; a ratio below 1 means the opposite.

In figure 2, we see that municipalities with housing values lower than those of their respective metropolitan areas do not increase their housing stock or deliver permits as often as their counterparts with housing values higher than the metropolitan area. At the same time, municipalities with housing values at least 50 percent higher than their metropolitan medians show somewhat less unit growth using the municipal method.

FIGURE 2

Housing Values and Housing-Unit Growth, 2000 to 2015–2019/2020



Source: Author's calculations.

Notes: Loess best-fit graphs, showing standard errors; *n* = 1,127 for municipal method (permits); *n* = 1,456 for municipal method (units); *n* = 1,908 for tract method. The figure encompasses the central 90 percent of the distribution on both axes to eliminate outliers and excludes municipalities in metropolitan areas with negative housing growth. Unit growth and permits are from 2000–20 for the municipal method and from 2000 to 2015–19 for the tract method. Housing values are from 2015–19.

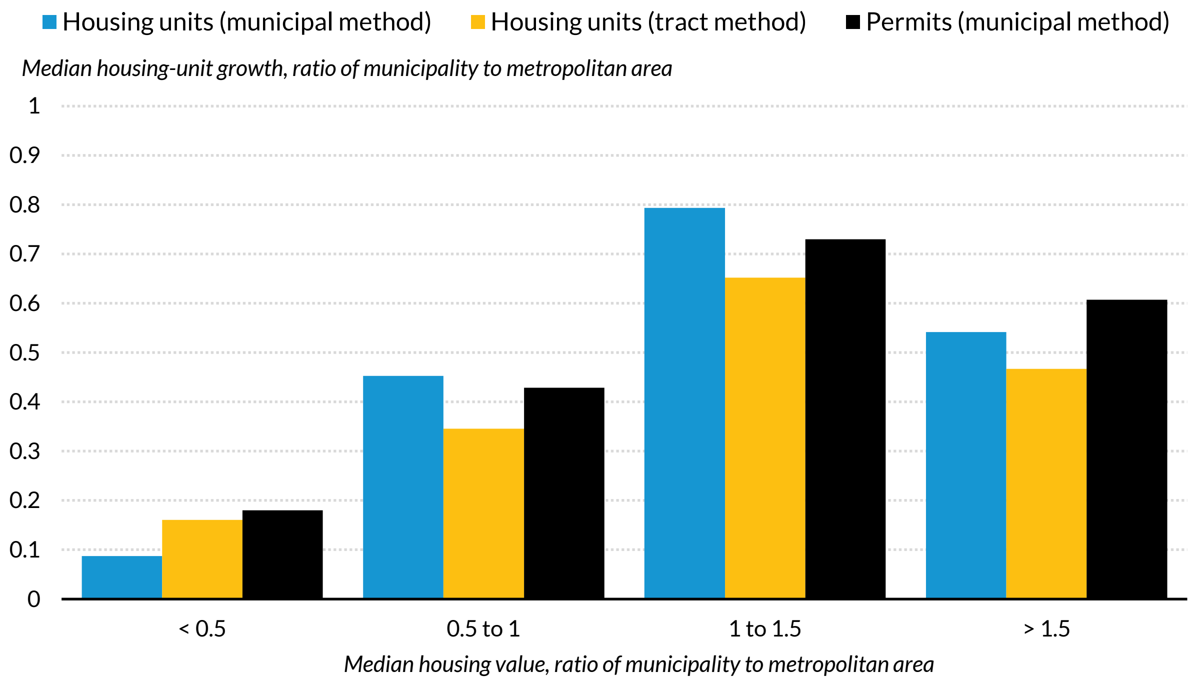
A *t*-test of difference of means, comparing proportional housing-unit growth and permit delivery in municipalities with housing values *below* their metropolitan average with those with values *above* their metropolitan average, is statistically significant ($p < 0.01$) for both methods. Low-value municipalities had unit growth between 48 and 53 percent of their respective metropolitan-area levels (tract and municipal methods, respectively), and permit delivery at 56 percent of metropolitan levels. High–housing value municipalities, on the other hand, had housing-unit growth that was 83 to 107 percent of metropolitan levels, and permit delivery at 81 percent.

I also compared unit growth and permit delivery between municipalities with very high housing values (150 percent or higher of their respective metropolitan areas) with those with moderately high housing values (100 to 150 percent of metropolitan area median). Those high-value municipalities have lower average unit growth and fewer permits than those that are somewhat less costly, but the difference is not statistically significant.

These associations between housing values and median housing-unit growth are documented in figure 3. The median municipality with housing values less than half the metropolitan average added less than 20 percent of its proportional housing (in either additional units or permits). But the median municipality with housing values of between 100 and 150 percent of the metropolitan average added between 65 and 80 percent of its proportional housing units, depending on the method.

FIGURE 3

Housing Values and Median Housing-Unit Growth, 2000 to 2015–19/20



Source: Author's calculations.

Notes: *n* = 1,239 for municipal method (permits); *n* = 1,754 for municipal method (units); *n* = 2,476 for tract method. The figure excludes municipalities in metropolitan areas with negative housing growth. Unit growth and permits are from the 2000–20 for municipal method and from 2000 to 2015–19 for the tract method. Housing values are from 2015–19.

To test the robustness of these findings, I examine these trends over two subsets of the period, 2000–10 and 2010–20 (appendix D). These comparisons show, first, that the relationship between housing values and housing permitting in the municipal method sample is virtually identical in the three periods examined. Second, though the relationship between local housing values and housing-unit growth is not as clearly replicated over time, the trend remains clear: Low-housing-value municipalities permitted fewer housing units and added fewer housing units than their higher-housing-value equivalents.

In these comparisons, I identify statistically significant differences in housing-unit growth ($p < 0.05$), proportional to metropolitan averages, in municipalities that had higher-than-average housing values compared with those that had lower-than-average values between 2000 and 2010 (both methods). More expensive municipalities added more housing on average between 2010 and 2020 (municipal method), but the difference was not statistically significant.[26] I find no difference between the moderately more expensive municipalities (100 to 150 percent of metropolitan housing values) and those that are very expensive (more than 150 percent).

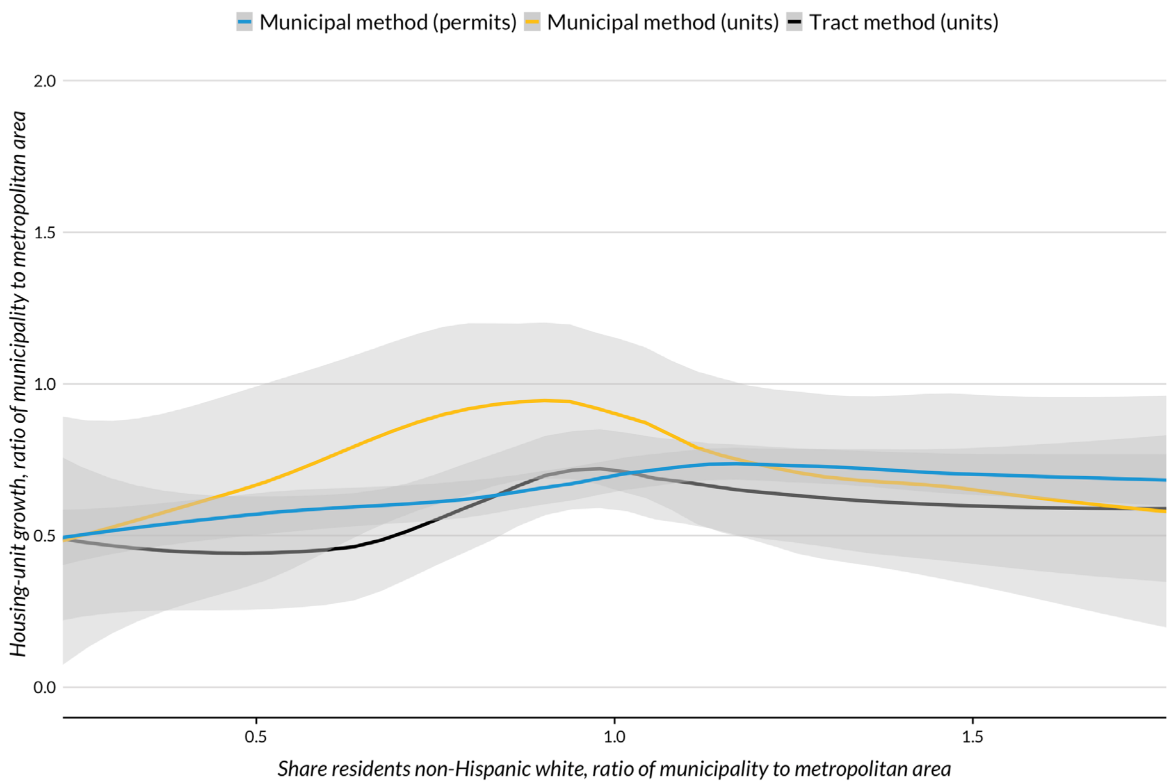
I then test these results within only the most expensive metropolitan areas. I select the seven metropolitan areas with at least 1 million housing units in 2020 and with median housing values of at least $400,000 in 2015–19 (these are, in order of cost, the San Francisco, Los Angeles, San Diego, New York, Boston, Seattle, and Washington, DC, metropolitan areas[27]). This produces a smaller sample of municipalities (494 for the municipal method and 384 for the tract method), limiting the power of this analysis. Appendix E shows no trend in the relationship between these variables; this null finding is confirmed in *t*-tests of means comparing municipalities with housing values above or below the metropolitan median. Overall, housing growth levels were constant across municipalities, even for the least expensive municipalities on average.

Similarly, I examine only the municipalities in the San Francisco metropolitan area, the most expensive large US region (Appendix E). This trend line suggests that the lower-value municipalities in the region added more housing than the high-value municipalities, in contrast to the national trend in figures 2 and 3. The difference between outcomes, however, is not statistically significant. That said, municipalities with housing values in the bottom quartile (less than about $700,000) added a statistically significantly ($p < 0.05$) higher level of housing between 2000 and 2015–19 (18.7 percent increase) than those in the top quartile (above about $1.2 million; a 4.8 percent increase), using the tract method.

I next explore the associations between several demographic attributes and housing outcomes. First, I examine municipal versus metropolitan non-Hispanic white population shares. A ratio above 1 means a municipality is whiter than its metropolitan area; a ratio below 1 means it is less white. Figure 4 shows that municipalities either considerably less white or considerably whiter than their respective metropolitan areas increased housing stock more slowly over the study period compared with those municipalities with white populations similar to their metropolitan areas (permit data do not show the same trends).

FIGURE 4

Housing-Unit Growth, by Share of Residents Who Are White



Source: Author's calculations.

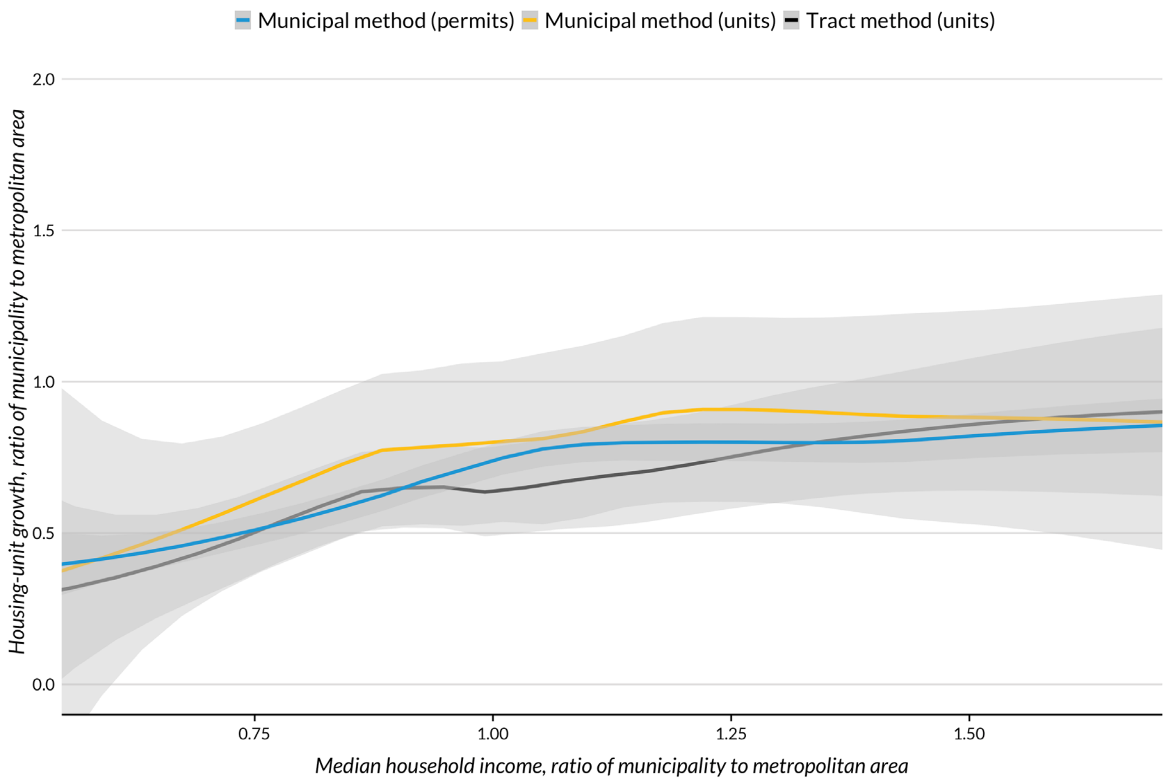
Notes: Loess best-fit graphs, showing standard errors; *n* = 1,273 for municipal method (permits); *n* = 1,598 for municipal method (units); *n* = 2,226 for tract method. The figure encompasses the central 90 percent of the distribution on both axes to eliminate outliers and excludes municipalities in metropolitan areas with negative housing growth. Housing-unit growth and housing permits are from 2000–20 for the municipal method and from 2000 to 2015–19 for the tract method. The share of non-Hispanic white residents is from 2015–19.

Using *t*-tests of means, I find no statistical difference in housing-unit growth between municipalities that are less white, versus those that are whiter than their respective metropolitan areas. Figure 4 indicates that the whitest municipalities added fewer units than those with racial demographics closer to the metropolitan average. I found no evidence to reinforce that visual finding because of variation. Yet I found a statistically significant ($p < 0.01$) higher level of *permitting* in municipalities whiter than their metropolitan area, compared with less-white municipalities.

Next, I compare municipal median household incomes and housing-unit growth (figure 5). These associations follow patterns similar to housing values. The communities with low median household incomes produced smaller increases in housing stock and delivered fewer permits relative to metropolitan averages. Unit growth is significantly higher ($p < 0.01$) for above-median income municipalities compared with below-median municipalities, using the tract method; this significance disappears for the municipal method. But there is a significantly higher rate of permit delivery in high-income municipalities.

FIGURE 5

Housing-Unit Growth, by Median Household Income



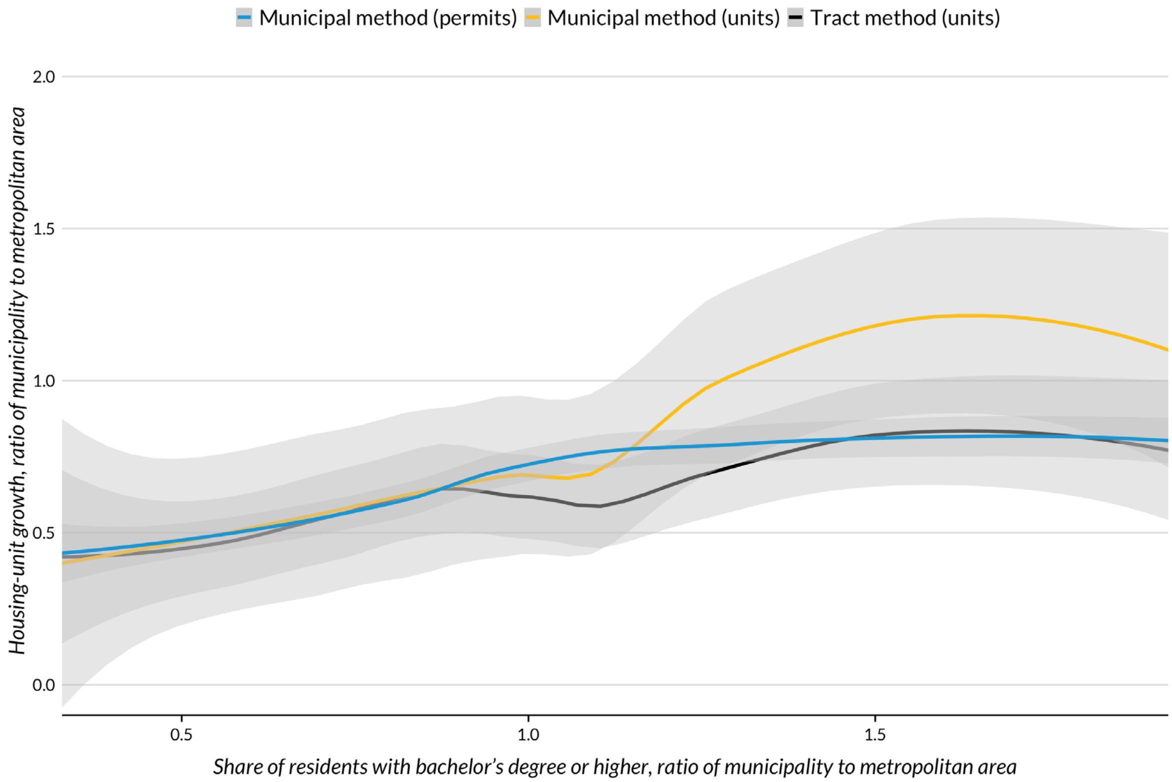
Source: Author's calculations.

Notes: Loess best-fit graphs, showing standard errors; *n* = 1,273 for municipal method (permits); *n* = 1,598 for municipal method (units); *n* = 2,226 for tract method. The figure encompasses the central 90 percent of the distribution on both axes to eliminate outliers and excludes municipalities in metropolitan areas with negative housing growth. Housing-unit growth and housing permits are from 2000–20 for the municipal method and from 2000 to 2015–19 for the tract method. Household incomes are from 2015–19.

Finally, I consider associations between municipal shares of adults with at least a bachelor's degree and housing-unit growth (figure 6). As for housing values and household incomes, municipalities with lower-than-regional educational attainment added significantly less housing and permitted fewer units than municipalities with higher-than-regional educational attainment ($p < 0.05$ for both methods). Unit growth appears to decline for municipalities with the highest educational attainment, though differences are not significant.

FIGURE 6

Housing-Unit Growth, by Educational Attainment of Residents



Source: Author's calculations.

Notes: Loess best-fit graphs, showing standard errors; *n* = 1,273 for municipal method (permits); *n* = 1,598 for municipal method (units); *n* = 2,226 for tract method. The figure encompasses the central 90 percent of the distribution on both axes to eliminate outliers and excludes municipalities in metropolitan areas with negative housing growth. Housing-unit growth and housing permits are from 2000–20 for the municipal method and from 2000 to 2015–19 for the tract method. Educational attainment is from 2015–19.

To further substantiate these findings, I use the municipal method data to compare housing growth rates across local demographic and ideological features, then I conduct a series of multivariate regressions, with results presented in appendix F.[28] These results should be treated with caution, because they are not causal in nature, but they do allow a comparison of the associations between various local characteristics and both housing production and housing permitting. In table F.1, I further document the degree to which low-wealth and limited-education communities feature less housing production. Municipalities with housing values, rents, household incomes, and educational attainment levels in the bottom 20 percent of the national distribution had median housing growth of 3.1 percent or less between 2000 and 2020; this compares to greater than 10 percent housing growth for municipalities with those values in the middle 20 percent of the distribution.

Using data about the ideological views of residents (Tausanovitch and Warshaw 2013), I show that the 20 percent most conservative municipalities in the dataset had higher housing growth (15.1 percent) than the 20 percent most liberal (9.4 percent), and both had higher growth than municipalities with residents with moderate ideologies (5.6 percent). Municipalities with higher shares of non-Hispanic white and Hispanic residents had more housing growth on average, whereas those with higher shares of non-Hispanic Black residents had less housing growth. Municipalities with a higher share of renters and higher population densities had less housing-unit growth, on average. All these trends play out similarly when examining housing permits. As noted in table 4, many of these variables are correlated with one another.

Table F.2 reaffirms that, after controlling for other local variables, municipalities with higher housing values feature higher rates of housing permitting and higher rates of unit growth between 2000 and 2020, though the significance of that relationship depends on the model used. On average, an increasing municipal population share that is non-Hispanic white is associated with less housing production and permitting, but that association is not significant, except for when evaluating permitting compared with national averages. Housing unit growth and permitting are lower in more densely populated municipalities.

Table F.2 also suggests a considerable role for local political ideologies in impacting housing growth. On average, municipalities with more politically conservative residents had more housing growth and permitted more units than those with more politically liberal residents. Once controlling for mean metropolitan ideologies, I find evidence that municipalities whose residents are more conservative than those of neighboring cities feature more housing growth and permitting. That said, as with table F.1, I find that municipalities with residents with moderate ideologies have the lowest rates of housing production; in fact, among *only* municipalities more liberal than the national average, there is a positive relationship between more liberal resident ideologies and housing growth, though this association is not as strong as the overall political trend.

The data I explored in this section point to several conclusions. First, at the national scale, municipalities with low housing values, low household incomes, and low educational attainment compared with their respective metropolitan areas consistently added less housing and delivered fewer permits than municipalities that have more expensive housing stock and residents with higher incomes and more years of education. These outcomes reaffirm that a large proportion of US cities face considerable obstacles in attracting development and suffer from uneven investment patterns. This likely has less to do with local land-use regulations than it does with private market interest. Figure 2 suggests that for a municipality to add housing, a minimum level of housing value, compared with the surrounding region, is required; robustness tests over multiple periods and regressions reaffirm these findings (appendix D; appendix F). That said, this relationship does not express itself clearly in the most expensive metropolitan areas, which may have demand for investment even in their least expensive municipalities (appendix E).

On the other hand, there is strong demand to add housing in municipalities that are more expensive and that have residents with higher incomes and more years of education. For the nation, such municipalities have passed a threshold of sufficient consumer or developer interest for new housing. On average, these jurisdictions have been able to attract their fair metropolitan share—or more—of housing-unit growth.

Yet these data also show considerable variation among the most sought-after municipalities. Figures 2, 3, 4, and 6 imply that municipalities at the far end—with the most expensive housing stock and the whitest and most educated populations—added fewer housing units compared with municipalities closer to metropolitan averages (though the differences are not statistically significant). Even after controlling for population density and household values, municipalities with a higher white population share feature less housing growth, and municipalities with residents whose ideologies are moderate feature the least housing growth (appendix F). The data from the San Francisco region show some evidence that the *most* expensive municipalities are adding considerably less housing than the least expensive. But there is variation; some expensive municipalities have little housing growth, whereas others have plenty of it. This suggests a large cohort of municipalities that, in theory, have the local real-estate market and development demand to attract additional housing—but that nonetheless add less than their fair share. These communities may be leveraging local land-use regulations to prevent construction.

Findings: Municipalities That Have Added Few Housing Units

The above findings indicate that adding housing is more feasible when municipalities have relatively expensive housing and populations with higher incomes and more education. But plenty of evidence suggests that many municipalities—particularly whiter, wealthier suburban towns—leverage land-use regulations to limit construction. Although many expensive municipalities have higher increases in housing units than their metropolitan area, many have much less.

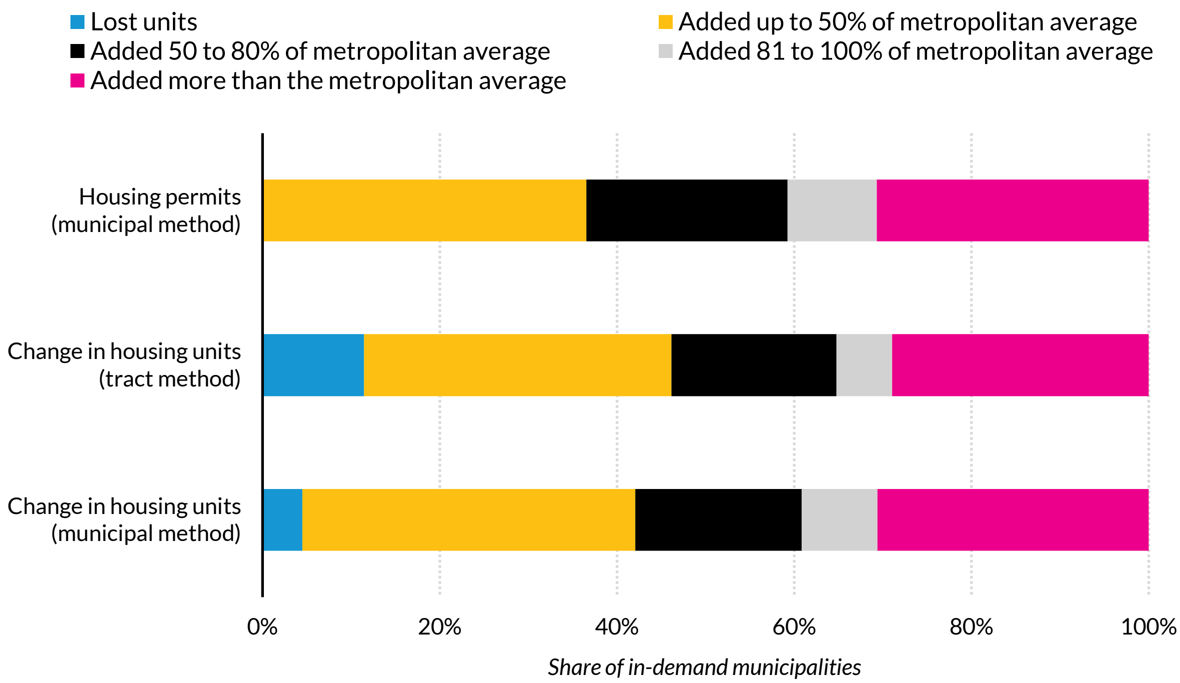
I pursue this investigation, then, by asking which municipalities *with high demand for development* added the least housing or permitted the fewest units compared with their metropolitan areas over the past two decades. These are the municipalities where the growth in housing supply has not aligned with what we might expect given an expensive real-estate market—and where land-use regulations may have been particularly restrictive. I present several alternative lists of municipalities that fit these characteristics, acknowledging that there is no single manner by which to measure housing underproduction. I do not consider development potential directly, meaning I am not analyzing the possibility for redevelopment on specific sites within neighborhoods.

I first subset the samples to just those municipalities with median housing values at least 30 percent higher than metropolitan averages. I use this as a proxy for high development demand, learning from figure 2. I include only municipalities where metropolitan housing production from 2000 to 2020 was positive because I focus only on regions where interest in housing has grown. I then include only municipalities that awarded permits, meaning they likely have at least some control over land-use regulations. This subsetting produces lists of 245 and 349 municipalities (municipal and tract methods, respectively). Of these, 228 municipalities are on both lists. These high-cost municipalities account for 18.6 and 15.5 percent of the population of the municipal and tract method datasets in 2015–19, respectively.[29] Appendix G maps high-value jurisdictions in the two samples, with indicative municipalities labeled.

Among high-cost municipalities, only roughly 30 percent added disproportionately more housing or permitted a disproportionately more units compared with their respective metropolitan areas (figure 7).[30] Examples include core cities such as Seattle and Washington, DC, inner suburban cities such as Hoboken, New Jersey, and fast-growing, exurban cities such as Draper, Utah, and Frisco, Texas. Another 40 percent of these in-demand municipalities added less than half their "fair share" of metropolitan units or lost units. This finding paints a striking picture of such expensive municipalities: Most created the conditions for less housing production than we would expect on the basis of real-estate market conditions alone.

FIGURE 7

Growth in Housing Stock and Housing Permit Deliveries among In-Demand Municipalities



Source: Author's calculations.

Notes: *n* = 238 for municipal method (permits); *n* = 245 for municipal method (units); *n* = 349 for tract method. Includes data only for municipalities with housing values at least 30 percent higher than metropolitan average.

For comparison, among municipalities with somewhat less valuable housing stock (110 to 130 percent of metropolitan average), housing growth was much larger (appendix H). Of the municipal method sample, 44 percent added more housing compared with their respective metropolitan areas. And only about 30 percent added less than half of their "fair share" of metropolitan units. In other words, despite lesser demand, more of these municipalities added housing. (Appendix H also reaffirms that municipalities with very low housing values added very little housing; only 5 percent of municipalities with housing values less than 50 percent of their respective metropolitan median added housing at a higher-than-regional average rate.)

I developed tables documenting in-demand municipalities (130 percent of metropolitan housing values and above) that had the worst performance in housing growth compared with their respective metropolitan areas (as shown in figure 7). Tables 5 and 6 list the 20 municipalities with the least additional housing (municipal and tract methods, respectively), and table 7 lists those with the least permitting. Table 8—limited to those municipalities with data available through both methods—then lists those that average the worst performing when considering all three outputs. All tables note demographic characteristics and subsidized affordable housing availability.

These municipalities underperformed dramatically in adding housing, doing little to meet demand despite a market. While the US population increased by almost 17 percent between 2000 and 2020 according to census data, and while the average metropolitan area increased housing availability by almost 15 percent (appendix B), municipalities in tables 5 and 6 grew housing units by 1.5 percent or less; in fact, many lost housing. Municipalities in table 7 permitted few new housing units. There is some—but far from complete—overlap in the municipalities listed in tables 5 through 8, partly because many municipalities only had data available for one of the analytical methods.

TABLE 5

Municipalities with High Housing Values and Low Levels of Housing-Unit Growth Relative to Their Respective Metropolitan Areas (Municipal Method)

			2015–19			Compared with Metro. Area, 2015–19			2000–20 % Change in Housing Units		
Place	Metro. area	State	Population	% SFHs	Median household income	% residents white	% adults w/bachelor's	Housing values	Municipality	Metro. area	Assisted units
Homewood	Birmingham	Alabama	25,534	59.5	$84,157	1.2	2.0	2.1	−5	16	45
Palm Beach	Miami	Florida	8,723	28.3	$141,348	3.0	2.1	4.2	−7	23	0
Grosse Pointe Park	Detroit	Michigan	11,153	76.7	$115,341	1.3	2.1	2.1	−2	6	0
University Park	Dallas	Texas	25,036	83.7	$224,485	1.8	2.5	6.0	−11	48	0
La Grange Park	Chicago	Illinois	13,395	68.8	$105,783	1.6	1.5	1.5	−3	14	0
Hinsdale	Chicago	Illinois	17,710	88.6	$203,368	1.5	2.1	3.7	−2	14	0
West University Place	Houston	Texas	15,603	99.4	$250,001	2.1	2.6	5.7	−4	53	0
Scarsdale	New York	New York	17,837	94.3	$250,001	1.6	2.2	3.2	−1	13	0
Manhattan Beach	Los Angeles	California	35,500	80.5	$153,023	2.5	2.2	3.3	0	11	104
Bexley	Columbus	Ohio	13,786	79.8	$109,036	1.2	2.1	2.1	−1	28	50
Lighthouse Point	Miami	Florida	11,195	63.0	$81,445	2.7	1.5	1.9	0	23	0
Bellaire	Houston	Texas	18,815	96.8	$206,734	1.8	2.4	4.3	0	53	0
Webster Groves	St. Louis	Missouri	22,951	84.0	$102,759	1.2	2.0	1.7	0	12	65
Laguna Beach	Los Angeles	California	23,036	74.1	$129,983	2.8	1.9	2.9	0	11	123
Ridgewood	New York	New Jersey	25,179	81.5	$184,355	1.6	1.9	1.7	0	13	154
Glen Rock	New York	New Jersey	11,780	95.2	$187,000	1.6	1.8	1.4	0	13	6
Marblehead	Boston	Massachusetts	20,500	74.5	$123,333	1.3	1.5	1.5	1	16	4
Larkspur	San Francisco	California	12,319	44.4	$109,426	2.0	1.5	1.6	1	15	52
River Forest	Chicago	Illinois	10,970	69.6	$129,928	1.6	2.1	2.5	1	14	0
East Grand Rapids	Grand Rapids	Michigan	11,759	96.4	$144,922	1.2	2.4	2.2	1	20	0

Source: Author's calculations based on US Census 2000 and 2020, 2015–19 American Community Survey, and National Housing Preservation Database.

Notes: Assisted units are from the National Housing Preservation Database. Excludes municipalities in metropolitan areas that lost housing between 2000 and 2020. Excludes census-designated places. Metropolitan area names have been simplified for legibility. SFH = single-family home.

TABLE 6

Municipalities with High Housing Values and Low Housing-Unit Growth Relative to Their Metropolitan Areas (Tract Method)

			2015–19			Compared with Metro. Area, 2015–19			2000 to 2015–19 % Change in Housing Units		
Place	Metro. area	State	Populatio n	% SFHs	Median household income	% residents white	% adults w/bachelor's	Housing values	Municipality	Metro. area	Assisted units
Grosse Pointe Park	Detroit	Michigan	11,153	76.7	$115,341	1.3	2.1	2.1	−9	6	0
Grosse Pointe Woods	Detroit	Michigan	15,498	95.5	$104,848	1.3	2.0	1.4	−6	6	77
Calabasas	Los Angeles	California	23,988	74.8	$125,814	2.6	1.8	1.8	−10	11	75
Port Neches	Beaumont	Texas	12,782	85.3	$71,740	1.4	1.4	1.4	−6	8	0
Shaker Heights	Cleveland	Ohio	27,387	58.8	$87,235	0.8	2.1	1.5	−4	6	179
Rocky River	Cleveland	Ohio	20,198	66.7	$74,950	1.3	1.9	1.6	−4	6	100
El Segundo	Los Angeles	California	16,731	50.1	$109,577	2.1	1.7	1.8	−7	11	0
East Lansing	Lansing	Michigan	48,729	44.8	$39,867	0.9	2.2	1.3	−6	12	509
Shorewood	Milwaukee	Wisconsin	13,290	41.3	$74,745	1.3	2.0	1.6	−6	12	430
Haddonfield	Philadelphia	New Jersey	11,345	84.5	$150,958	1.5	2.0	2.0	−6	13	206
Northampton	Springfield	Massachusetts	28,516	52.7	$66,522	1.2	1.8	1.5	−3	8	793
Webster Groves	St. Louis	Missouri	22,951	84.0	$102,759	1.2	2.0	1.7	−4	12	65
Lumberton	Lumberton	North Carolina	20,928	66.2	$36,935	1.5	1.5	1.5	0	1	1,969
University City	St. Louis	Missouri	34,498	59.0	$61,274	0.7	1.7	1.6	−3	12	366
Vestavia Hills	Birmingham	Alabama	34,307	77.0	$109,485	1.4	2.2	2.3	−4	16	168
Glen Rock	New York	New Jersey	11,780	95.2	$187,000	1.6	1.8	1.4	−3	13	6
Buffalo Grove	Chicago	Illinois	41,062	71.1	$115,951	1.3	1.7	1.4	−3	14	5
Ridgewood	New York	New Jersey	25,179	81.5	$184,355	1.6	1.9	1.7	−3	13	154
Whitefish Bay	Milwaukee	Wisconsin	13,972	85.9	$124,397	1.3	2.1	1.8	−3	12	0
Dobbs Ferry	New York	New York	11,070	50.6	$143,462	1.5	1.6	1.5	−2	13	0

Source: Author's calculation based on US Census 2000, 2015–19 American Community Survey, and National Housing Preservation Database.

Notes: Assisted units are from the National Housing Preservation Database. Excludes cities in metropolitan areas that lost housing between 2000 and 2020. Excludes census-designated places. Metropolitan area names have been simplified for legibility. Data for local characteristics other than change in housing units are at the municipal level. Data for municipal changes in housing units are the sum of sample tracts. SFH = single-family home.

TABLE 7

Municipalities with High Housing Values and Low Housing Permitting Relative to Their Metropolitan Areas (Municipal Method)

			2015–19			Compared to Respective Metro. Area, 2015–2019			2000–2020 Units Permitted as % of 2000 Units		
Place	Metro. area	State	Population	% SFHs	Median household income	% residents white	% adults w/bachelor's	Housing values	Municipality	Metro. area	Assisted units
Scarsdale	New York	New York	17,837	94.3	$250,001	1.6	2.2	3.2	0	15	0
Buffalo Grove	Chicago	Illinois	41,062	71.1	$115,951	1.3	1.7	1.4	0	16	5
Addison	Dallas	Texas	15,302	20.8	$74,986	1.0	1.6	1.6	0	51	0
Hudson	Akron	Ohio	22,263	90.7	$134,963	1.1	2.3	2.3	0	11	0
East Grand Rapids	Grand Rapids	Michigan	11,759	96.4	$144,922	1.2	2.4	2.2	1	23	0
Miami Springs	Miami	Florida	14,146	65.6	$61,795	0.7	1.1	1.5	1	23	167
Piedmont	San Francisco	California	11,317	97.6	$224,659	1.8	1.7	2.4	1	15	42
Miami Shores	Miami	Florida	10,459	87.3	$123,478	1.3	1.7	2.0	2	23	0
Shaker Heights	Cleveland	Ohio	27,387	58.8	$87,235	0.8	2.1	1.5	1	9	179
Floral Park	New York	New York	16,003	74.1	$117,857	1.7	1.3	1.3	1	15	27
Bexley	Columbus	Ohio	13,786	79.8	$109,036	1.2	2.1	2.1	3	28	50
Whitefish Bay	Milwaukee	Wisconsin	13,972	85.9	$124,397	1.3	2.1	1.8	1	12	0
Green	Akron	Ohio	25,760	74.5	$75,566	1.2	1.2	1.3	1	11	50
Grosse Pointe Park	Detroit	Michigan	11,153	76.7	$115,341	1.3	2.1	2.1	1	11	0
Upper Arlington	Columbus	Ohio	35,299	82.3	$123,548	1.2	2.1	2.1	3	28	0
La Grange Park	Chicago	Illinois	13,395	68.8	$105,783	1.6	1.5	1.5	2	16	0
Grosse Pointe Woods	Detroit	Michigan	15,498	95.5	$104,848	1.3	2.0	1.4	2	11	77
State College	State College	Pennsylvania	42,275	31.6	$34,005	0.9	1.6	1.3	4	23	716
Monterey	Salinas	California	28,352	52.1	$80,694	2.2	2.1	1.5	2	12	142
Brookline	Boston	Massachusetts	59,180	23.7	$117,326	1.0	1.7	2.1	3	14	1,960

Source: Author's calculations based on US Census 2000, 2015–19 American Community Survey, Census Building Permits Survey, and National Housing Preservation Database.

Notes: Assisted units are from the National Housing Preservation Database. Excludes municipalities in metropolitan areas that lost housing between 2000 and 2020. Excludes census-designated places. Metropolitan area names have been simplified for legibility. SFH = single-family home.

TABLE 8

Municipalities with High Housing Values and Low Housing-Unit Growth and Permitting Relative to Their Metropolitan Areas (Municipal and Tract Methods)

			2015–19				Versus Metro. Area, 2015–19		2000–20 % Change in Housing Units		
Place	Metro. area	State	Population	% SFHs	Median household income	% residents white	% adults w/bachelor's	Housing values	Municipality	Metro. area	Assisted units
Grosse Pointe Park	Detroit	Michigan	11,153	76.7	$115,341	1.3	2.1	2.1	−2	6	0
Miami Shores	Miami	Florida	10,459	87.3	$123,478	1.3	1.7	2.0	2	23	0
La Grange Park	Chicago	Illinois	13,395	68.8	$105,783	1.6	1.5	1.5	−3	14	0
Whitefish Bay	Milwaukee	Wisconsin	13,972	85.9	$124,397	1.3	2.1	1.8	2	12	0
Floral Park	New York	New York	16,003	74.1	$117,857	1.7	1.3	1.3	1	13	27
Miami Springs	Miami	Florida	14,146	65.6	$61,795	0.7	1.1	1.5	2	23	167
Bexley	Columbus	Ohio	13,786	79.8	$109,036	1.2	2.1	2.1	−1	28	50
Larkspur	San Francisco	California	12,319	44.4	$109,426	2.0	1.5	1.6	1	15	52
Upper Arlington	Columbus	Ohio	35,299	82.3	$123,548	1.2	2.1	2.1	3	28	0
Glen Rock	New York	New Jersey	11,780	95.2	$187,000	1.6	1.8	1.4	0	13	6
Webster Groves	St. Louis	Missouri	22,951	84.0	$102,759	1.2	2.0	1.7	0	12	65
Buffalo Grove	Chicago	Illinois	41,062	71.1	$115,951	1.3	1.7	1.4	5	14	5
Grosse Pointe Woods	Detroit	Michigan	15,498	95.5	$104,848	1.3	2.0	1.4	2	6	77
Scarsdale	New York	New York	17,837	94.3	$250,001	1.6	2.2	3.2	−1	13	0
University City	St. Louis	Missouri	34,498	59.0	$61,274	0.7	1.7	1.6	3	12	366
Worthington	Columbus	Ohio	14,621	84.5	$104,362	1.2	1.9	1.5	5	28	32
East Grand Rapids	Grand Rapids	Michigan	11,759	96.4	$144,922	1.2	2.4	2.2	1	20	0
Piedmont	San Francisco	California	11,317	97.6	$224,659	1.8	1.7	2.4	2	15	42
River Forest	Chicago	Illinois	10,970	69.6	$129,928	1.6	2.1	2.5	1	14	0
Haddonfield	Philadelphia	New Jersey	11,345	84.5	$150,958	1.5	2.0	2.0	1	13	206

Source: Author's calculations based on US Census 2000 and 2020, 2015–19 American Community Survey, Census Building Permits Survey, and National Housing Preservation Database.

Notes: Assisted units are from the National Housing Preservation Database. Excludes municipalities in metropolitan areas that lost housing between 2000 and 2020. Excludes census-designated places. Metropolitan area names have been simplified for legibility. SFH = single-family home.

The municipalities in tables 5 through 8 share demographic features. Overall, they average a 45 percent whiter population and 90 percent higher share of adults with college degrees than their respective metropolitan areas. The nation's most exclusive communities are often far less diverse than their surrounding areas. This appears to be especially true for educational attainment: While a few municipalities have lower white population shares than their metropolitan area (East Lansing, Michigan; Miami Springs, Florida; Shaker Heights, Ohio; State College, Pennsylvania; and University City, Missouri—three of these have large universities), *every* municipality listed on all tables has educational attainment levels higher than their respective metropolitan areas.

The municipalities are located in states nationwide, in coastal, Southern, and Midwestern states. Most are midsize suburbs averaging about 20,000 residents, and almost all are located within large metropolitan areas. Some are inner suburbs adjacent to the metropolitan area's central city (e.g., Calabasas, California; Floral Park, New York; Grosse Pointe Park, Michigan; and Shaker Heights, Ohio) or even within its boundaries (e.g., West University Place and University Park, Texas). Almost all have high household incomes, with the notable exceptions of the university towns.

Among the municipalities in the four tables, on average, 75 percent of housing available is within single-family homes. Many cities have almost no apartment units, with less than 10 percent of housing coming in that form, including Scarsdale, New York, and West University Place, Texas. Nationally, 67 percent of housing is single family according to census 2015–19 data; the figure is likely far lower within most urban areas. In the Chicago urban area, for example, only 57 percent of units are single-family homes.

These municipalities have also offered little space for subsidized housing (counting units added during the study period and in the past). Of table 8's 20 cities, 8 have no "project-based" subsidized units, meaning no housing supported through programs such as the low-income housing tax credit, public housing, or project-based Section 8. Similarly limited availability of subsidized housing is apparent in tables 5 through 7 as well. This suggests that municipalities preventing housing construction are making it difficult specifically for people with particularly low incomes to live within their borders.

Discussion

This paper leverages a new approach to measuring how well housing supply growth aligns with what we might expect, given market demand. I show that across the United States, municipalities with lower housing values and less educational attainment have smaller relative increases in their housing stock and permitted fewer dwellings than counterparts elsewhere in their respective regions. Municipalities with residents with moderate ideologies added the least housing over the study period. I confirmed the associations between housing value and changes in housing stock through regressions and robustness tests that examined subsets of the analysis period. In these lower-value and lower-education municipalities, the primary explanation for limited growth in housing stock is likely limited demand for housing and little interest from developers, not excessively restrictive land-use regulations.

At the same time, I show considerable variation in local housing growth. My examination of the most expensive metropolitan areas shows that even the low-cost municipalities in those regions have demand for additional housing. Nationally, this variation plays out in the municipalities where significant demand and plentiful interest from developers is likely. About 70 percent of municipalities with a strong local and metropolitan real-estate market have added less than their fair share of housing over the past two decades—and about 40 percent are capturing less than half their fair share of regional housing growth. Further, in the San Francisco region, the most expensive quarter of municipalities added significantly less housing than the least expensive quarter.

I identify a cohort of some of the most exclusionary municipalities in the country—those that have built the least compared with their respective metropolitan areas and failed to take on their fair share of regional housing. These municipalities have a considerably higher share of residents who are white and have more years of education than their neighbors. These municipalities also have few federally subsidized "project-based" housing units available.

This research approach could help states, the federal government, and other entities identify how well the spatial distribution of the housing market's growth aligns with regional interest in new housing. If certain jurisdictions with robust local and metropolitan real-estate demand have provided little new housing over the past few decades, they may be leveraging their land-use regulations or other policies intentionally to suppress housing supply.

This analysis does not directly measure actual municipal land-use regulations that make the construction of new housing more difficult. Additional research is necessary to develop national metrics that can quickly analyze available data and provide comparable information across municipalities. Such metrics would allow researchers to fill gaps in data inherent in the comparative historical analysis conducted here. Such new research could also provide insight into general underproduction; it is possible that many metropolitan areas are adding less housing overall than is necessary to keep up with demand, and that this is a product of generally restrictive land-use policies across an entire region.

I am also unable to provide insight into counties or townships—or into the dynamics at play when municipalities annex surrounding areas. These communities may have once been under the land-use jurisdiction of county governments, but then were placed under the management of towns or cities. Future research could examine how these changing geographies have affected housing-related outcomes.

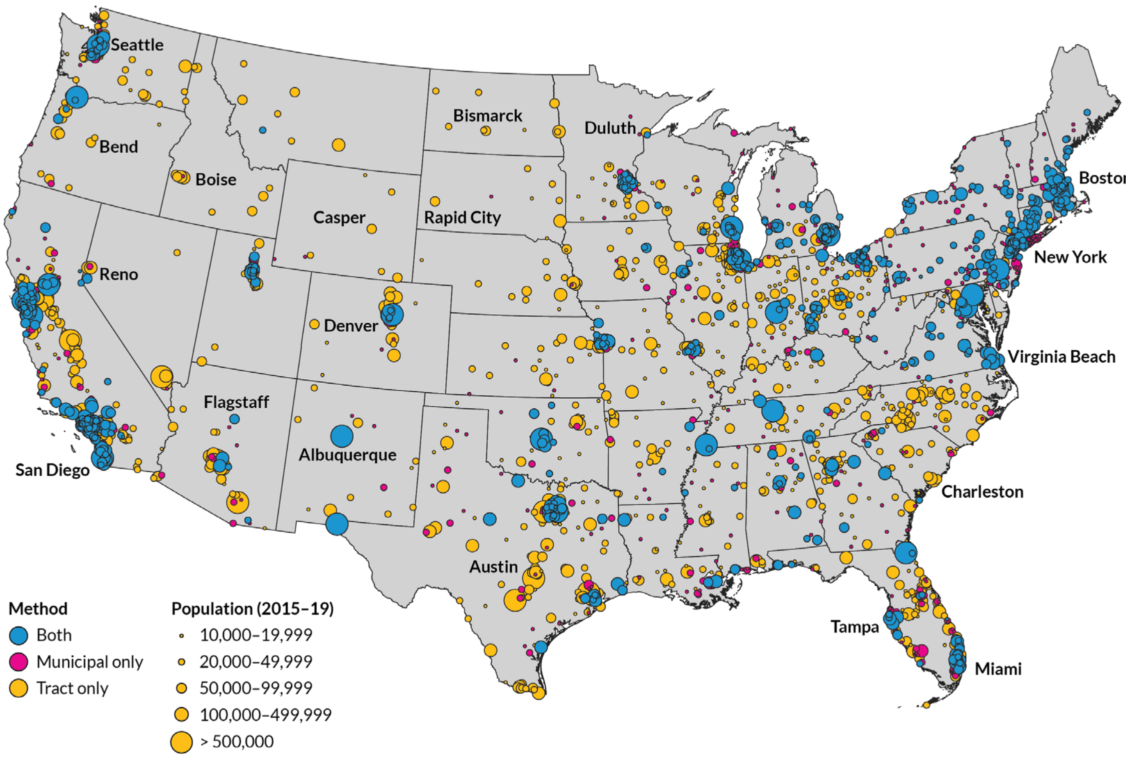
We need to know more about the degree to which reforming land-use regulations in the most exclusive municipalities would address the need for more housing supply. The cohort of high-value municipalities that I identify represents a large share of metropolitan populations, indicating that, if done right, reforms could effectively target jurisdictions where the real-estate market is primed for further investment. But the exact nature of those reforms is a matter of debate.

Finally, we need more evidence about how much housing is growing in the communities most appropriate for new construction. I have shown that the municipalities with demand for housing growth—but which are nevertheless producing little housing—have residents who have higher incomes and have a higher share of white residents than their respective metropolitan areas. But I have not analyzed, for example, whether the municipalities are located in areas adjacent to employment, near good transportation, and with adequate development sites. Additional research could assess how they compare on those counts, as well.

Appendix A. Sample of Municipalities

FIGURE A.1

Map of Municipalities Included in Analysis Samples



Source: Author's calculations.

Notes: Labels are indicative of key cities, but not specifically meaningful to the report's findings.

Appendix B. Sample of Housing Units and Permits

TABLE B.1

Housing Units and Permits Included in Analysis Samples, by 50 Largest Metropolitan Areas

	Housing Units					Housing Permits				
		Municipal method		Tract method			Municipal method		Tract method	
CBSA	Metro, 2020	Muni. In Sample, 2020	Share	Muni. In Sample, 2020	Share	Metro	Muni. In Sample	Share	Muni. In Sample	Share
New York–Newark–Jersey City, NY-NJ-PA	7,982,384	5,722,006	72	4,972,276	62	1,033,810	671,431	65	662,980	64
Los Angeles–Long Beach–Anaheim, CA	4,721,766	4,077,413	86	4,120,004	87	542,143	391,271	72	486,801	90
Chicago-Naperville-Elgin, IL-IN-WI	3,943,945	2,324,037	59	2,862,442	73	551,442	216,416	39	403,273	73
Dallas–Fort Worth–Arlington, TX	2,947,189	1,774,664	60	2,207,290	75	1,010,280	496,372	49	809,399	80
Houston–The Woodlands–Sugar Land, TX	2,740,182	266,451	10	1,298,070	47	1,055,763	57,727	5	405,360	38
Miami–Fort Lauderdale–Pompano Beach, FL	2,641,002	1,262,676	48	1,529,232	58	489,031	197,784	40	317,156	65
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	2,586,947	1,018,494	39	889,471	34	298,245	64,557	22	71,753	24
Washington-Arlington-Alexandria, DC-VA-MD-WV	2,500,128	899,273	36	590,798	24	566,033	102,840	18	114,731	20
Atlanta–Sandy Springs–Alpharetta, GA	2,414,292	395,408	16	540,199	22	841,403	124,145	15	226,824	27
Boston-Cambridge-Newton, MA-NH	2,032,387	1,286,608	63	983,061	48	251,366	132,791	53	104,103	41
Phoenix-Mesa-Chandler, AZ	1,985,705	303,891	15	1,482,546	75	711,179	55,101	8	524,621	74
Detroit-Warren-Dearborn, MI	1,901,256	1,165,843	61	1,194,004	63	202,122	59,914	30	61,341	30
San Francisco–Oakland–Berkeley, CA	1,847,185	1,427,702	77	1,503,724	81	246,926	151,929	62	211,118	85
Seattle-Tacoma-Bellevue, WA	1,650,246	773,327	47	986,355	60	446,615	184,955	41	280,408	63
Riverside-San Bernardino-Ontario, CA	1,580,448	540,422	34	1,066,608	67	416,264	117,354	28	302,979	73
Minneapolis–St. Paul–Bloomington, MN-WI	1,503,829	1,096,403	73	1,075,265	72	338,905	207,528	61	227,300	67
Tampa–St. Petersburg–Clearwater, FL	1,465,158	650,022	44	503,549	34	369,631	86,106	23	101,620	27
St. Louis, MO-IL	1,258,862	469,057	37	558,638	44	191,115	24,641	13	58,672	31
San Diego–Chula Vista–Carlsbad, CA	1,228,505	1,108,809	90	1,003,327	82	205,840	180,251	88	181,227	88
Denver-Aurora-Lakewood, CO	1,211,194	537,694	44	787,799	65	365,910	119,264	33	276,275	76
Baltimore-Columbia-Towson, MD	1,190,095	598,726	50	321,668	27	171,838	17,877	10	22,814	13
Pittsburgh, PA	1,124,531	298,764	27	296,150	26	102,218	11,639	11	12,644	12
Charlotte-Concord-Gastonia, NC-SC	1,108,163	-	0	448,902	41	429,906	-	0	22,295	5
Orlando-Kissimmee-Sanford, FL	1,087,949	121,700	11	280,560	26	433,242	14,677	3	143,833	33
Portland-Vancouver-Hillsboro, OR-WA	1,033,420	363,280	35	585,365	57	260,962	73,957	28	163,552	63
San Antonio-New Braunfels, TX	1,015,678	24,615	2	574,956	57	255,274	2,138	1	192,415	75
Cleveland-Elyria, OH	968,069	769,129	79	755,169	78	85,777	49,351	58	49,351	58
Cincinnati, OH-KY-IN	957,458	345,523	36	361,497	38	155,820	24,882	16	37,973	24
Austin–Round Rock–Georgetown, TX	946,764	7,130	1	439,334	46	435,020	-	0	285,405	66
Kansas City, MO-KS	938,503	503,569	54	667,685	71	202,401	82,395	41	133,876	66

	Housing Units					Housing Permits				
		Municipal method		Tract method			Municipal method		Tract method	
CBSA	Metro, 2020	Muni. In Sample, 2020	Share	Muni. In Sample, 2020	Share	Metro	Muni. In Sample	Share	Muni. In Sample	Share
Sacramento-Roseville-Folsom, CA	933,562	335,081	36	445,142	48	218,795	62,444	29	161,675	74
Las Vegas–Henderson–Paradise, NV	917,656	7,423	1	443,118	48	388,400	708	0	195,199	50
Columbus, OH	902,082	90,131	10	503,454	56	200,605	7,583	4	131,515	66
Indianapolis-Carmel-Anderson, IN	893,492	459,001	51	561,213	63	219,258	5,513	3	146,710	67
Nashville-Davidson-Murfreesboro-Franklin, TN	828,009	337,037	41	432,636	52	309,629	7,652	2	117,829	38
Virginia Beach–Norfolk–Newport News, VA-NC	760,076	574,736	76	598,905	79	147,886	104,093	70	109,088	74
Providence-Warwick, RI-MA	726,938	348,480	48	364,052	50	55,800	14,387	26	14,877	27
San Jose–Sunnyvale–Santa Clara, CA	708,400	601,481	85	615,584	87	123,286	106,297	86	117,571	95
Milwaukee-Waukesha, WI	693,765	487,786	70	535,383	77	76,225	33,392	44	48,598	64
Jacksonville, FL	690,609	451,997	65	415,083	60	249,155	4,182	2	8,671	3
Oklahoma City, OK	607,725	491,509	81	462,053	76	132,320	113,535	86	114,171	86
Raleigh-Cary, NC	576,280	-	0	212,240	37	265,449	-	0	158,149	60
New Orleans–Metairie, LA	571,914	351,103	61	243,045	42	85,622	24,773	29	28,664	33
Memphis, TN-MS-AR	565,930	302,255	53	366,754	65	121,964	7,093	6	32,506	27
Louisville/Jefferson County, KY-IN	560,778	29,688	5	64,285	11	109,132	1,882	2	8,239	8
Richmond, VA	551,968	226,888	41	134,882	24	130,190	16,376	13	16,376	13
Buffalo-Cheektowaga, NY	538,903	276,099	51	223,218	41	40,578	13,973	34	11,334	28
Hartford–East Hartford–Middletown, CT	522,472	213,135	41	134,340	26	48,308	9,581	20	6,263	13
Rochester, NY	489,463	158,640	32	110,499	23	47,773	8,537	18	4,302	9
Birmingham-Hoover, AL	487,824	162,475	33	211,631	43	89,935	18,967	21	46,459	52

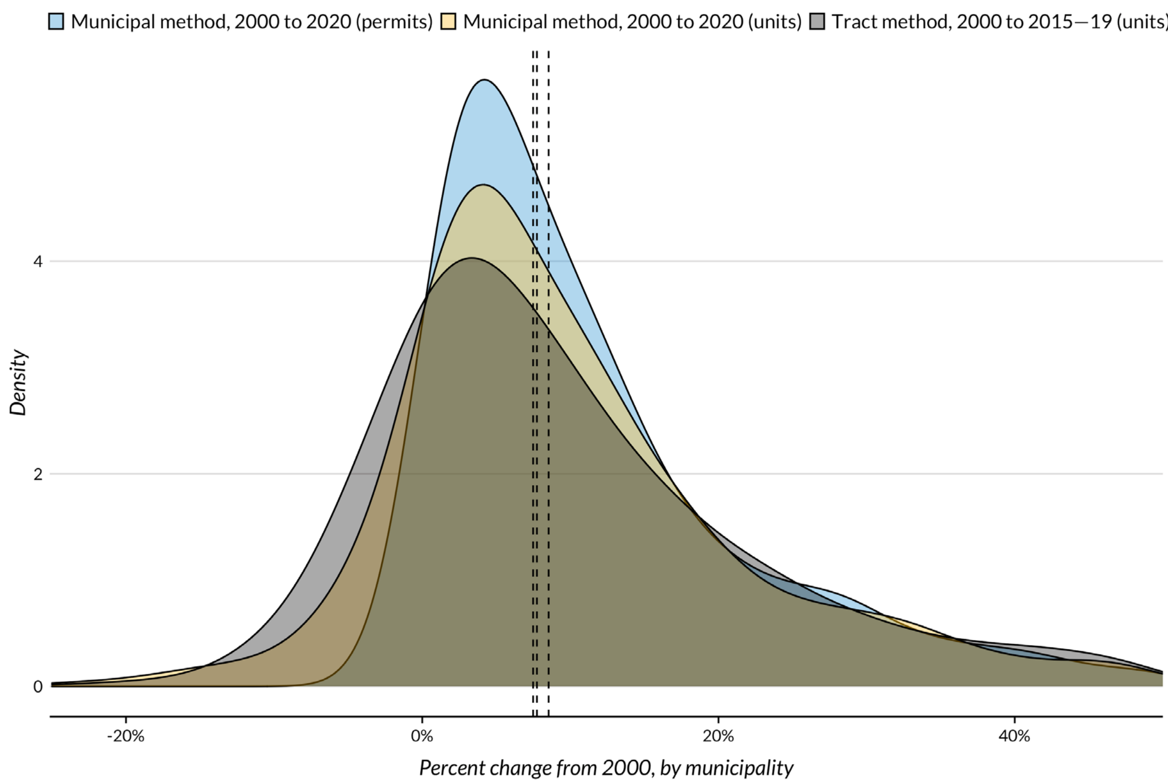
Source: Author's calculations based on US Census 2000 and 2020, 2015–19 American Community Survey, and Census Building Permits Survey.

Notes: Metro-scale housing unit and permits represent the full count. Units and permits for the municipal method represent full counts for sample municipalities. Units for the tract method represent only housing units within constant-geography tracts; permit counts for the tract method represent all permits within the full municipalities with any sample tracts. (In other words, some permits occurred outside the tract method sample.) CBSA = Core-based statistical area.

Appendix C. Change in Housing Units and Permits among Sample Municipalities

FIGURE C.1

Percentage Change in Number of Housing Units and Permits among Sample Municipalities



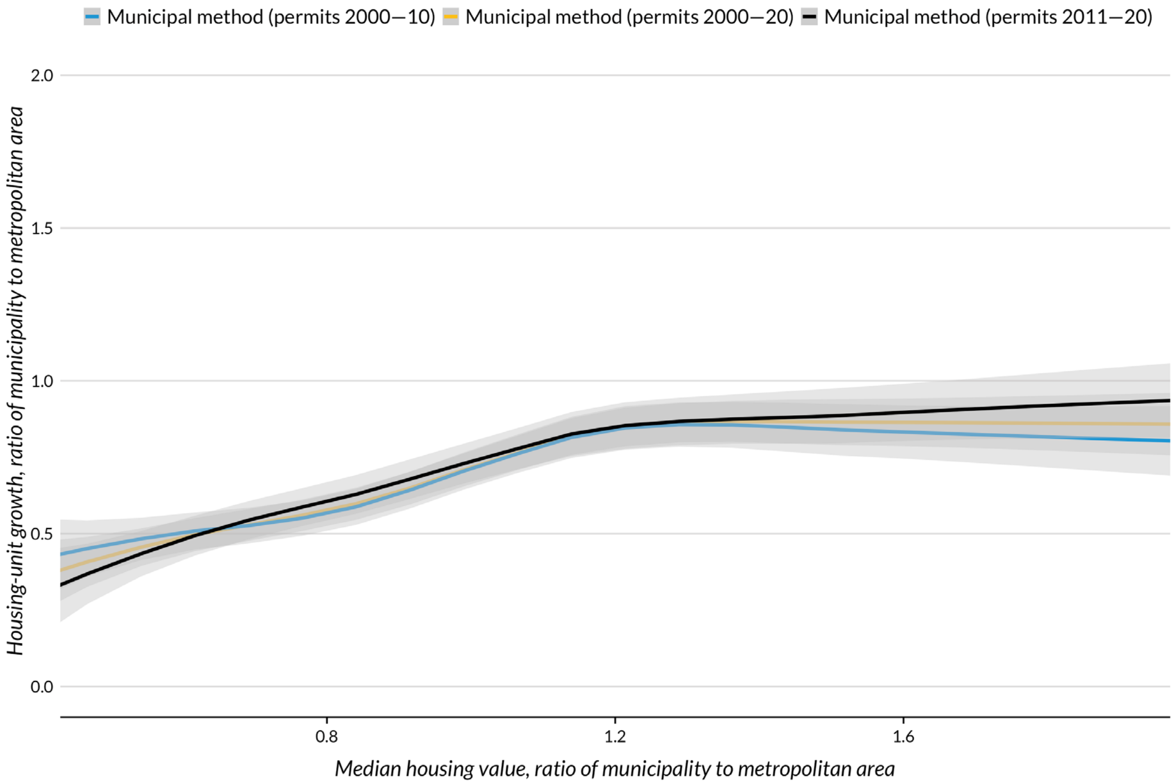
Source: Author's calculations.

Notes: *n* = 1,830 for municipal method housing units; *n* = 1,416 for municipal method housing permits; *n* = 2,584 for tract method. There are no municipalities with a negative number of permits; as such, the data below 0 is an artifact of the graphing method. Medians for each group are noted with dashed lines; as they are all very close to one another, they are not labeled.

Appendix D. Robustness Tests

FIGURE D.1

Housing Values and Housing Permitting across Multiple Periods

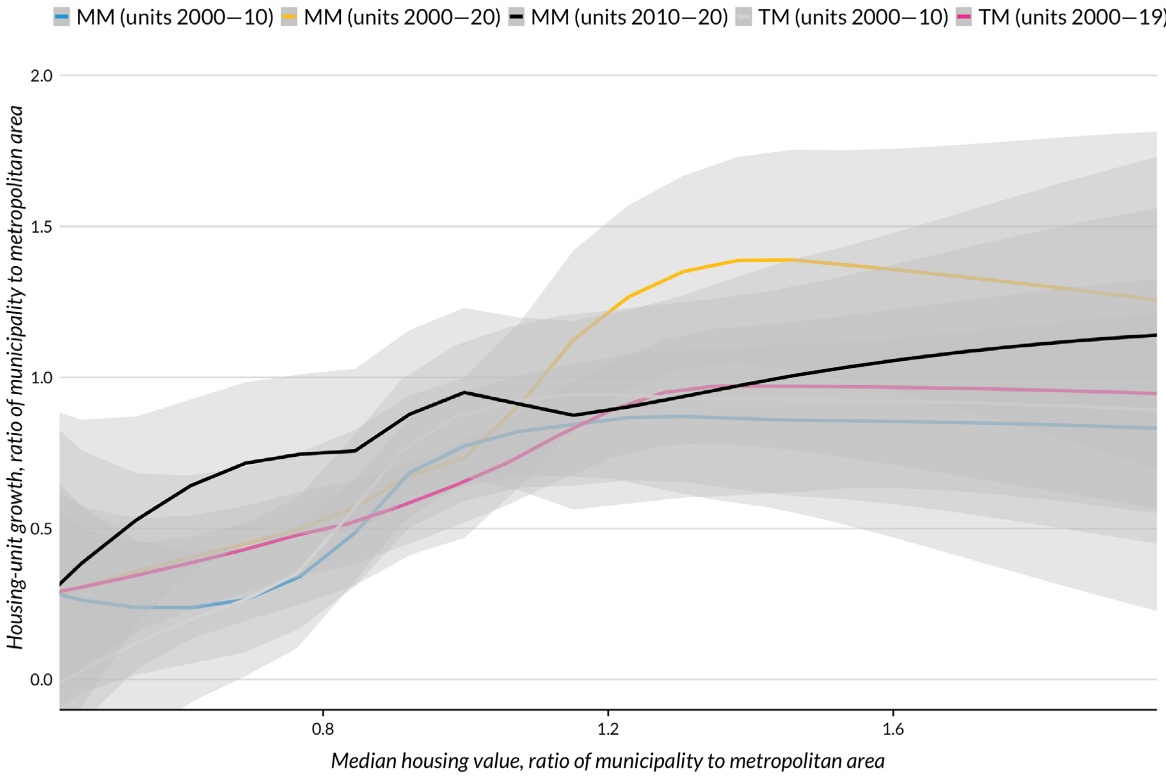


Source: Author's calculations.

Notes: Loess best-fit graphs, showing standard errors; *n* = 1,127. Encompasses central 90 percent of the distribution on both axes to eliminate outliers. Excludes municipalities in metropolitan areas with negative housing growth. Housing values for 2015–19.

FIGURE D.2

Housing Values and Housing-Unit Growth across Multiple Periods, 2000–20



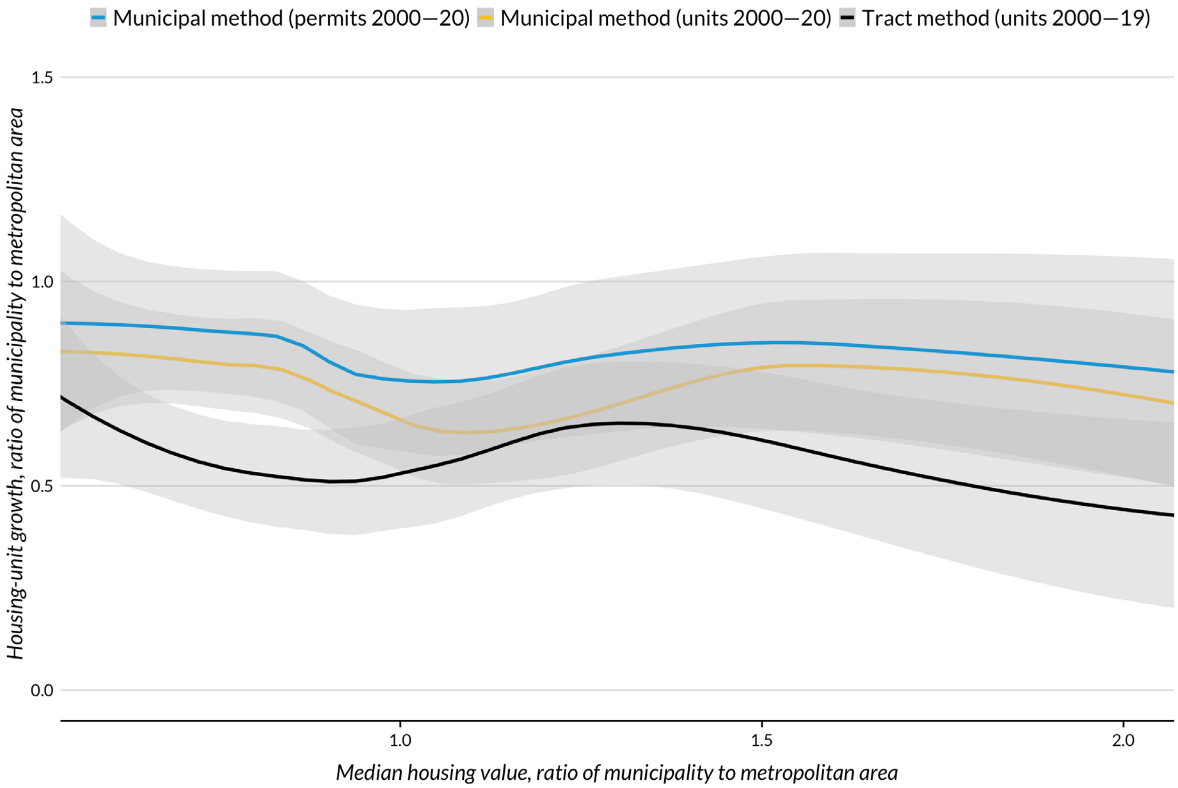
Source: Author's calculation.

Notes: Loess best-fit graphs, showing standard errors; *n* = 1,456 for municipal method; *n* = 1,908 for tract method. Encompasses central 90 percent of the distribution on both axes to eliminate outliers. Excludes municipalities in metropolitan areas with negative housing growth. Housing values for 2015–19. Tract data from 2010–15/19 not shown because of short time horizon. MM = municipal method; TM = tract method.

Appendix E. High-Cost Metropolitan Areas

FIGURE E.1

Housing Values and Unit Growth, 2000 to 2015–2019/2020, High-Cost Metropolitan Areas

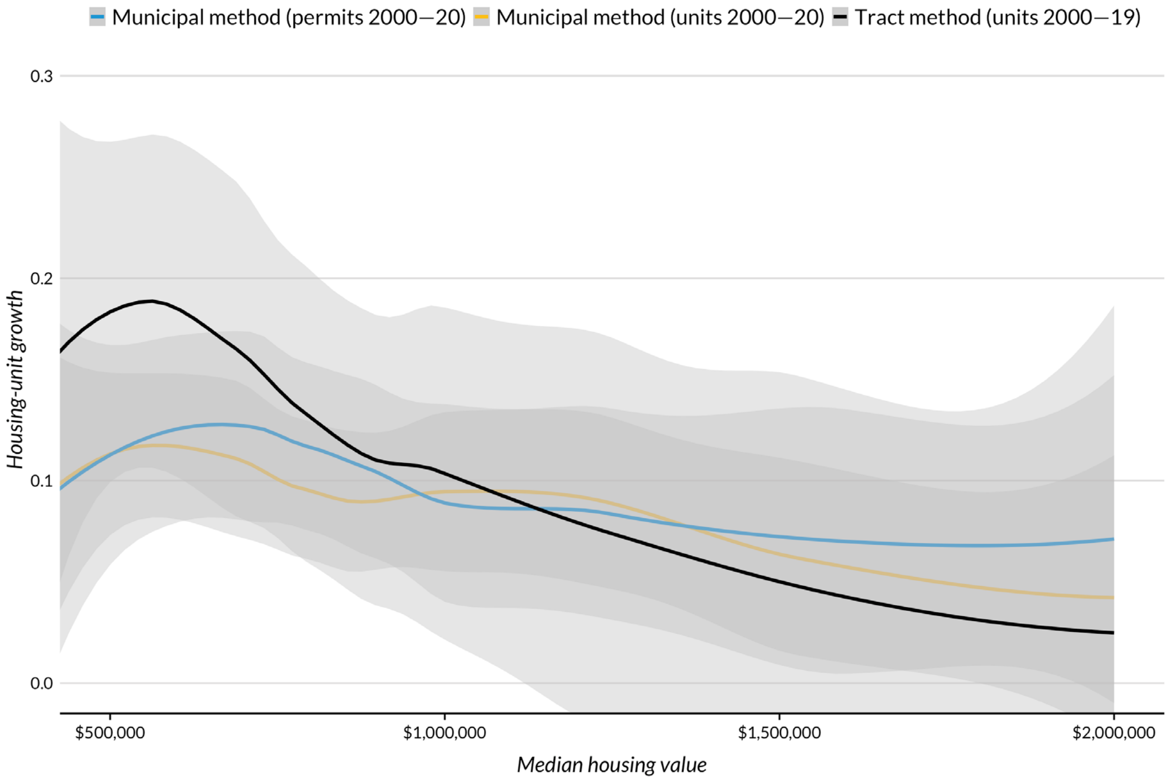


Source: Author's calculations.

Notes: Loess best-fit graphs, showing standard errors; *n* = 492 for municipal method (units); *n* = 359 for municipal method (permits); *n* = 382 for tract method. Encompasses central 90 percent of the distribution on both axes to eliminate outliers. Housing values for 2015–19. Includes municipalities only in the San Francisco, Los Angeles, San Diego, New York, Boston, Seattle, and Washington, DC, metropolitan areas.

FIGURE E.2

Housing Values and Unit Growth, 2000 to 2015–2019/2020, San Francisco Metropolitan Areas



Source: Author's calculations.

Notes: Loess best-fit graphs, showing standard errors; *n* = 46 for municipal method (units); *n* = 39 for municipal method (permits); *n* = 51 for tract method. Encompasses central 90 percent of the distribution on both axes to eliminate outliers. Housing values for 2015–19. San Francisco metropolitan area median housing value in 2015–19 was $871,350.

Appendix F. Housing Growth and Local Characteristics

TABLE F.1

Municipal Median Housing Growth, by Municipal Demographic or Ideological Characteristic

	Compared to National Distribution					
	Bottom 20%	Middle 20%	Top 20%	Bottom 20%	Middle 20%	Top 20%
Municipal-Level Variable	**Median Percentage Growth in Housing Units, 2000–2020**			**Median Permits, 2000–2020, as a Share of Housing Units in 2000**		
Population density per square mile	11.0%	8.6%	5.8%	0.08	0.04	0.03
Median housing value	0.2%	12.1%	7.8%	0.02	0.07	0.05
Median gross rent	0.9%	11.6%	9.0%	0.03	0.07	0.06
Median household income	1.0%	10.3%	9.0%	0.03	0.06	0.06
Share population below federal poverty level	10.2%	9.9%	2.2%	0.07	0.05	0.03
Share households renting	8.9%	8.3%	6.6%	0.07	0.05	0.04
Share adults 25+ with a bachelor's degree	3.1%	10.5%	10.0%	0.03	0.06	0.06
Share of population non-Hispanic white	6.6%	8.2%	8.5%	0.04	0.05	0.05
Share of population non-Hispanic Black	7.2%	8.7%	4.1%	0.06	0.05	0.04
Share of population Hispanic	5.8%	7.8%	9.0%	0.04	0.05	0.04
Local political ideologies	9.4%	5.6%	15.1%	0.03	0.04	0.09

Source: Author's calculations based on US Census 2000 and 2020, 2015–19 American Community Survey, Census Building Permits Survey, and ideologies data based on Tausanovitch and Warshaw (2013).

Notes: Municipal-level demographic data are for 2015–19. Uses the set of data generated through the municipal method. Local political ideologies are rated on a −1 to +1 scale, indicating liberal to conservative preferences, and based on a compilation of surveys about local resident preferences; e.g., the "bottom 20 percent" of ideologies means the municipalities with the most liberal residents (Tausanovitch and Warshaw 2013). Table can be read as follows: Municipalities with population density levels in the bottom 20 percent of the national distribution (the least dense municipalities) had a median 11 percent increase in their housing units, compared to a 5.8 percent increase among municipalities with population densities in the top 20 percent of the national distribution.

TABLE F.2

Regressions on Housing Units and Permits, by Municipality

		Housing Units						Housing Permits					
		Percent Growth in Units, 2000–2020, by Municipality			Ratio of Municipal Unit Growth to CBSA Growth			Permits 2000–2020, as Share of Units in 2000, by Municipality			Permitting Rate by Municipality Compared to CBSA		
Population density (log)	Municipal	−0.06 (0.01) ***	−0.02 (0.01) *	−0.06 (0.01) ***	−0.01 (0.14)	−0.28 (0.14) *	−0.15 (0.08)	−0.06 (0.01) ***	−0.04 (0.01) ***	−0.08 (0.1) ***	−0.23 (0.04) ***	−0.20 (0.04) ***	−0.18 (0.05) ***
Median housing value (log)	Municipal	0.07 (0.01) ***	0.08 (0.01) ***	NA	−0.16 (0.60)	NA	NA	0.06 (0.01) ***	0.07 (0.01) ***	NA	0.28 (0.03) ***	NA	NA
	Ratio to CBSA[a]	NA	NA	0.12 (0.05) *	NA	0.28 (0.25)	0.54 (0.16) ***	NA	NA	0.13 (0.05) *	NA	0.20 (0.06) ***	0.42 (0.12) ***
Share non-Hispanic white	Municipal	−0.07 (0.02) ***	−0.06 (0.03)	NA	0.38 (0.59)	NA	NA	−0.05 (0.02) ***	−0.08 (0.03) ***	NA	−0.14 (0.11)	NA	NA
	Ratio to CBSA[a]	NA	NA	−0.04 (0.02)	NA	−0.37 (0.29)	−0.18 (0.11)	NA	NA	−0.06 (0.03) *	NA	−0.02 (0.05)	−0.15 (0.09)
Local political ideologies	Municipal	NA	0.24 (0.05) ***	NA	0.13 (0.74)	NA	NA	NA	0.22 (0.06) ***	NA	0.22 (0.13)	NA	NA
	Compared with CBSA[b]	NA	NA	0.08 (0.05)	NA	NA	0.72 (0.27) ***	NA	NA	0.05 (0.04)	NA	NA	0.29 (0.14) *
	Intercept	−0.25 (0.10) *	−0.62 (0.14) ***	0.58 (0.12) ***	2.64 (7.44)	3.12 (1.19) ***	1.60 (0.716) *	−0.14 (0.07) *	−0.32 (0.13) *	0.72 (0.12) ***	−0.73 (0.44)	2.23 (0.30) ***	1.96 (0.45) ***
	Adjusted R^2	0.06	0.10	0.06	0.00	0.00	0.06	0.06	0.09	0.07	0.11	0.04	0.08
	n	1827	807	587	802	1820	584	1423	701	507	665	1258	504

Source: Author's calculations based on US Census 2000 and 2020, 2015–19 American Community Survey (for population density, housing value, and share white), Census Building Permits Survey, and Tausanovitch and Warshaw (2013) for ideology data.

Notes: Uses the set of data generated through the municipal method; variables selected to avoid multi-collinearity in results. Robust standard errors are noted in parentheses.
*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Population density is inhabitants per square mile. CBSA = Core-Based Statistical Area. NA = not applicable. Local political ideologies are rated on a −1 to +1 scale, indicating liberal to conservative preferences, and based on a compilation of surveys about local resident preferences (Tausanovitch and Warshaw 2013). Based on findings from table F.1, I separately assessed the effect of municipalities having more extreme resident ideologies in both directions (not shown), finding a positive relationship between ideologies *squared* and housing growth. I also identified a positive association between increasing liberal ideologies and more housing growth just for the subset of municipalities with ideologies more liberal than the national average. Finally, I conducted regressions that included a dummy variable for high-cost jurisdictions, but I found no significance in that evaluation.

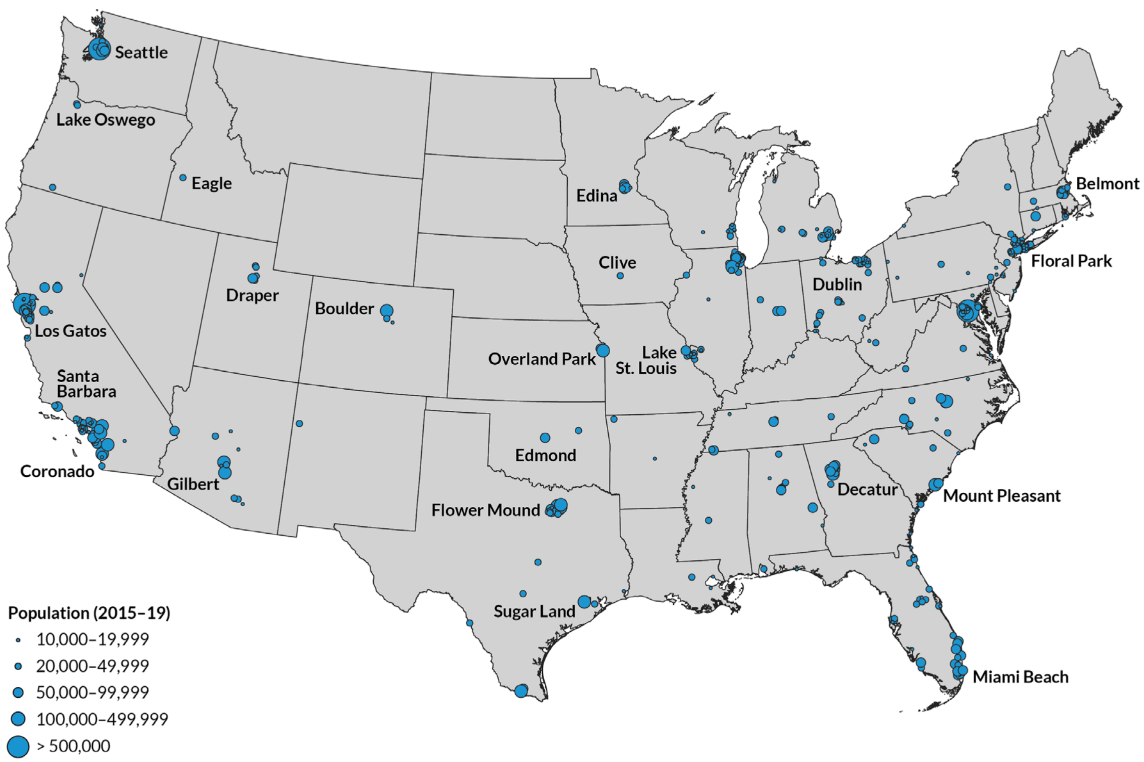
[a] Municipal value divided by CBSA average.

[b] Municipal value minus the mean of municipal ideologies in its respective CBSA; a higher figure means more conservative. Only included for CBSAs with at least 5 municipalities with ideology data.

Appendix G. In-Demand Municipalities

FIGURE G.1

Map of In-Demand Municipalities, by Population



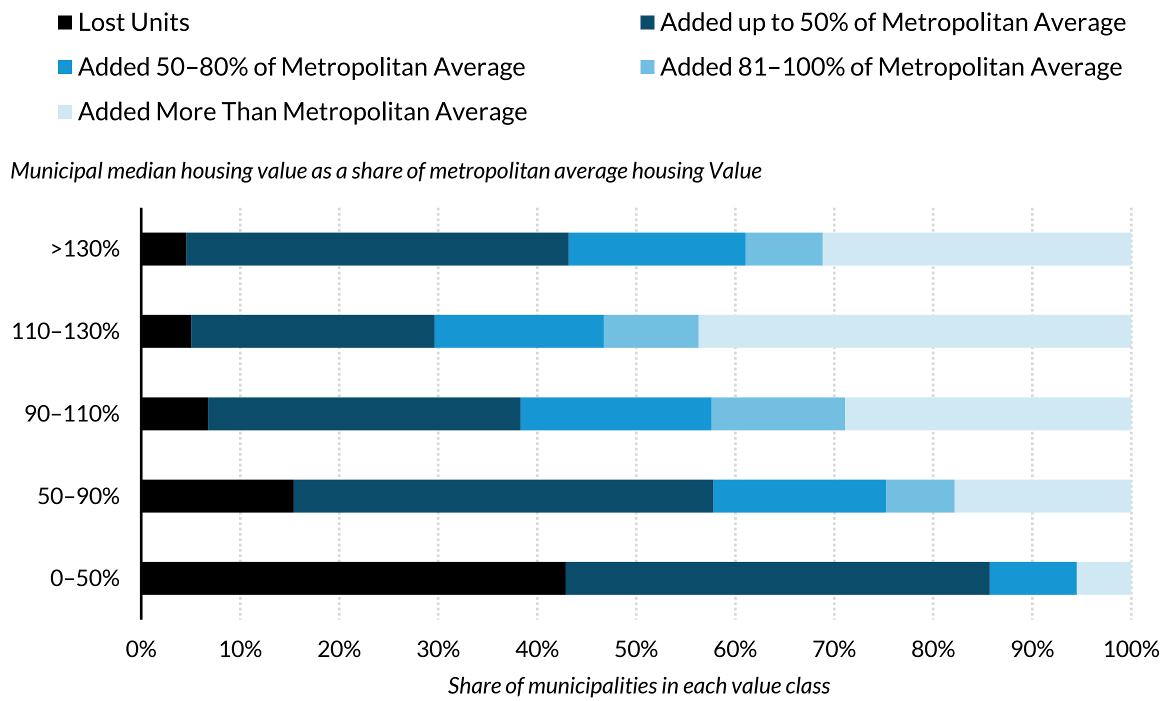
Source: Author's calculations.

Notes: Labels are indicative of key cities, but not specifically meaningful to the report's findings.

Appendix H. In-Demand Municipalities

FIGURE H.1

Growth in Housing Stock, by Relative Municipal Housing Value



Source: Author's calculations.

Notes: Using municipal method dataset. Figure can be read as follows: Among municipalities with housing values at least 30 percent higher than their respective metropolitan areas, 5 percent lost housing units between 2000 and 2020, while 31 percent added housing at a higher rate than their respective metropolitan areas.

Notes

[1] Sam Khater, Len Kiefer, and Venkataramana Yanamandra, "Housing Supply: A Growing Deficit," Freddie Mac, Research Note, May 7. 2021, https://www.freddiemac.com/research/insight/20210507-housing-supply.

[2] According to recent data, fewer than half of households can afford the median-priced home in their respective metropolitan areas in the Honolulu, San Jose, Los Angeles, San Francisco, San Diego, Oxnard, Miami, New York, Stockton, Riverside, Denver, Boston, and Seattle regions (in order, with Honolulu having the smallest share of households that can afford housing). Joint Center for Housing Studies, "Who Can Afford the Median-Priced Home in Their Metro?," 2022, https://www.jchs.harvard.edu/son2017-housing-affordability-table.

[3] Yonah Freemark, Lydia Lo, Eleanor Noble, and Ananya Hariharan, "Cracking the Zoning Code: Understanding Local Land-Use Regulations and How They Can Advance Affordability and Equity," Urban Institute, May 2022, https://apps.urban.org/features/advancing-equity-affordability-through-zoning/#home.

[4] Solomon Greene and Jorge González-Hermoso, "How Communities Are Rethinking Zoning to Improve Housing Affordability and Access to Opportunity," *Urban Wire* (blog), Urban Institute, June 12, 2019, https://www.urban.org/urban-wire/how-communities-are-rethinking-zoning-improve-housing-affordability-and-access-opportunity.

[5] The concept of a "fair" distribution of housing dates back at least to the 1960s in the United States and encouraged legislation in states (e.g., Massachusetts) to allow developers to override local zoning codes in municipalities that are not providing a reasonable amount of affordable housing. "Fair housing" generally refers to the concept of ensuring nondiscrimination against protected classes in the housing market, as required by the Fair Housing Act of 1968, though that policy has suffered from insufficient enforcement. See Elder, Lo, and Freemark (2022).

[6] Lydia Lo, "Who Zones? Mapping Land-Use Authority across the US," *Urban Wire* (blog), Urban Institute, December 9, 2019, https://www.urban.org/urban-wire/who-zones-mapping-land-use-authority-across-us.

[7] The President's Committee on Urban Housing (1968) and Advisory Commission on Regulatory Barriers to Affordable Housing (1991) identified a broad spectrum of approaches the federal and state governments could take to improve access to housing. The 1968 report, for example, recommended that local zoning be preempted for federally subsidized affordable housing. Most of the recommendations of both reports, however, went unheeded. See also Yonah Freemark and Eleanor Noble, "Reconciliation Bill Funding Could Help Localities Fight Exclusionary Zoning," *Urban Wire* (blog), Urban Institute, October 27, 2021, https://www.urban.org/urban-wire/reconciliation-bill-funding-could-help-localities-fight-exclusionary-zoning.

[8] Graham MacDonald, Solomon Greene, and Emma Nechamkin, "We Need Better Zoning Data to Address Pressing Housing and Development Issues," *Urban Wire* (blog), Urban Institute, January 15, 2019, https://www.urban.org/urban-wire/we-need-better-zoning-data-address-pressing-housing-and-development-issues.

[9] Other researchers typically use the word "exclusionary" to describe municipalities that institute restrictive land-use regulations that prevent housing construction.

[10] I use housing values as a proxy for development demand for housing, but there may be other useful measures to represent this. In addition, development demand is somewhat different than consumer demand. Regional market demand could also reflect population growth, but I focus on households to avoid the conflation of issues such as growth in the number of children. Further, exclusionary housing policy is possible even in communities without developer demand for construction.

[11] SOCDS Building Permits Database, Permits for residential construction, 2021, https://socds.huduser.gov/permits/help.htm.

[12] Future research could evaluate exclusionary outcomes that occur among other land-use governing jurisdictions, including townships and counties.

[13] Daniel McCue, “Defining ‘Use With Caution’: How We’re Navigating New Census Bureau Data,” Joint Center for Housing Studies, April 28, 2022, https://www.jchs.harvard.edu/blog/defining-use-caution-how-were-navigating-new-census-bureau-data,

[14] The National Housing Preservation Database provides de-duplicated information on federally funded assisted housing across the United States, with state data included for Connecticut, Florida, and Massachusetts. Data include projects funded through project-based rental assistance (Section 8); Section 202 direct loans; HUD insurance programs; Section 236; low-income housing tax credits; HOME rental assistance; Sections 514 and 515 rural rental housing loans; Section 538 rural development; public housing; and project-based vouchers and mod rehab. US Department of Housing and Urban Development, Office of Policy Development and Research, “Picture of Subsidized Households,” 2021 https://www.huduser.gov/portal/datasets/assthsg.html; Public and Affordable Housing Research Corporation, National Housing Preservation Database, 2021, https://preservationdatabase.org/.

[15] Excluding municipalities with changing geographies has the negative consequence of excluding communities like Houston, which increased in land area by 11 percent between 2000 and 2020—while increasing its housing units by 28 percent. About 10 percent of the municipalities became *smaller* between 2000 and 2020; among cities in the sample, this was largely attributable to a reclassification of CDP boundaries. More than 80 percent of the cities in the sample that lost land area, have data in all years, are located in metropolitan areas, and have populations of at least 10,000 are CDPs, not political entities.

[16] Municipalities might have no data available in Census 2000, 2020, or the 2015–19 American Community Survey because of new municipal incorporations, name changes, and city-county mergers, among other possibilities.

[17] The building permit dataset divides New York City into its five constituent boroughs. I combine these into one data point; though each of the boroughs has a planning office, decisions over land-use regulations are ultimately determined at city hall. The permit dataset also includes information about counties when they issue permits directly. However, within metropolitan areas, these data are typically limited to the unincorporated areas of counties (the incorporated areas usually issue their own permits and make their own land-use choices). For example, the dataset includes data for both Houston and Harris County’s unincorporated areas. I choose not to analyze changes in housing units or building permits within these latter unincorporated areas because the geospatial data documenting them are not easily accessible and the unincorporated areas likely changed geographies between 2000 and 2020 (due to annexation and incorporation).

[18] I use National Historical Geographic Information System “GISJOIN” codes to make this link between areas in 2000 and 2020. I also include any jurisdictions described by the census as the “balance” of land left from other areas. Jurisdictions can be labeled as a balance when municipalities are located within counties that share some service provision jurisdictions.

[19] Surprisingly, land is sometimes transferred from one municipality to another. Municipalities, for example, occasionally “trade” land to allow a new development project to be located within a single jurisdiction.

[20] Scott Markley, Steven R. Holloway, Taylor Hafley, and Mathew Hauer, “HHUUD10: Historical Housing Unit and Urbanization Database 2010,” 2022, https://osf.io/fzv5e/.

[21] I choose not to use areal interpolation to adjust for the share of census tracts within each municipality because of a lack of information about *where* in the tract housing units may be located. This choice makes me more confident about comparing trends over time, as I am identifying changes within constant geographies.

[22] I choose not to use demographic data from the tract level in the tract method because municipal land-use policies are largely influenced by citywide choices, themselves the product of citywide demographics. That said,

a future multilevel study could attempt to disaggregate neighborhood- versus municipal-level changes in housing-unit production and compare these to tract- versus municipal-level demographics.

[23] Differences between averages in cities and metropolitan areas largely evaporate once I control for each city's metropolitan area, as shown in the ratio columns of table 3. This data effect likely occurs because metropolitan areas contain different numbers of cities. The New York–Newark–Jersey City, NY-NJ-PA, metro area, for example, contains 189 municipalities in the dataset; other metropolitan areas have just one city in the dataset.

[24] The use of municipalities as the scale of analysis assumes equivalence between jurisdictions; I do not weight, for example, for population size.

[25] The tract method sometimes covers a smaller number of housing units than the municipal method. This occurs because the tract method excludes tracts with geographies that do not have the majority of their land in any individual municipality.

[26] I do not measure change between 2010 and 2015–2019 using the tract method because of the short time period.

[27] The most expensive metropolitan areas are, officially, the San Francisco-Oakland-Berkeley, CA metro area; Los Angeles-Long Beach-Anaheim, CA metro area; San Diego-Chula Vista-Carlsbad, CA metro area; New York-Newark-Jersey City, NY-NJ-PA metro area; Boston-Cambridge-Newton, MA-NH metro area; Seattle-Tacoma-Bellevue, WA metro area; and the Washington-Arlington-Alexandria, DC-VA-MD-WV metro area.

[28] I only examine municipal method data in appendix F because of limitations on data available for municipalities whose boundaries changed from 2000 to 2020.

[29] The sample of high-value municipalities has a population of 19.7 million residents using the municipal method and 25.8 million using the tract method. These high-value municipalities accounted for 10 percent of overall sample land area in both methods.

[30] Among high-cost municipalities, only roughly 30 percent added a disproportionately large amount of housing or permitted a disproportionately large number of units compared with their respective metropolitan areas This discrepancy occurs despite the average municipality in this range adding more housing than its respective metropolitan area (figure 2), because a few in-demand municipalities experienced most of the housing growth in this category.

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